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U. S. DEPARTMENT OF COMMERCE
BUSINESS AND DEFENSE SERVICES ADMINISTRATION
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BIBLIOGRAPHY OF Technical Reports

Vol. 21, No. 6 June 4, 1954

CHEMICALS AND ALLIED PRODUCTS

Drugs and Pharmaceuticals

An attempt to produce anaphylactic phenomena in guinea pigs with sulphur mustard treated homologous plasma, by Paul A. Albert with technical assistance of Melvin M. Kotkin. U. S. Chemical Corps. Medical Laboratories, Army Chemical Center, Md. Jan 1954. 11p tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113569

Project no. 4-59-007. CMLRE ML-52.
1. Anaphylaxis 2. Blood - Chemical sterilization 3. Blood plasma, Sulfur-mustard treated - Effect on guinea pigs 4. Mustard gas - Derivatives - Uses 5. Mustard gas - Reactions with proteins 6. CC MD RR 242.

Preliminary report on the use of cortisone in the treatment of sulfur-mustard lesions of the rabbit eye, by John E. Imbody and Donald J. Guillet. U. S. Chemical Corps. Medical Laboratories, Army Chemical Center, Md. Jan 1954. 11p graph Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113565

Experimental data started 20 Jan 1952, completed Jan 1953. Project no. 4-59-12-007. Test program no. T19. CMLRE-ML-52.
1. Cornea - Mustard gas effects 2. Eyes - Mustard gas effects 3. Cortisone - Therapeutic use 4. Mustard gas - Therapeutic agents 5. CC MD RR 239.

Dyes

Zur kenntnis der lumineszensfähigkeit des reinen zincsulfids (Information on the luminescent properties of pure zinc sulfide), by Johanna Glassner. 1938. 38f photos, diagr, graphs (Text in German) Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Enlargement Print $6.50. PB 113392

Diss.-Technische Hochschule, Berlin. IB4023.
1. Zinc sulfide - Luminescence - Germany
2. Luminescent materials - Research - Germany.

Detergents

Development of an all-purpose detergent bar utilizing non-strategic materials, by J. A. Yeager. General Aniline and Film Corporation. Central Research Laboratory, Easton, Pa. Oct 1951. 30p graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. $1.50. PB 111337

Contract no. DA 44-109-qm-202. Central Research Laboratory CL-51-56. For German patent application I75,586 see PB 25614, Frames 9342-43.
1. Detergents, Synthetic - Evaluation 2. Detergents, Synthetic - Preparation 3. Detergents, Synthetic - Properties 4. Soaps - Substitutes.

Het ontvetten van voorwerpen vervaardigd uit aluminiumlegeringen mit behulp van trichlooraethyleen is gevaarlijk (Degreasing of articles made out of aluminum alloys with the aid of trichloroethylene is dangerous), by J. Van Hinte. Translated by F. Rizzo. Jan 1954. 7p Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113612

Translated from De Veiligheid (Safety) Aug-Sept 1952, p. 121-123.
1, Aluminum alloys - Degreasing - Netherlands
2. Ethylene, Tetrachloro - Uses - Netherlands
3. Ethylene, Trichloro - Polymerization - Netherlands 4. Ethylene, Trichloro - Combustion - Netherlands 5. NAVSHIPS T548.

Plastics and Plasticizers

Physikalischen eigenschaften der kerumischen isolierstoffe (Physical properties of ceramic insulating materials). Steatit-Magnesia A. G., Berlin. 1941. 6f photo, tables (Text in German) Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Enlargement Print $2.75. PB 113391

1. Insulating materials - Plastics - Physical properties - Germany 2. Insulation, Electrical - Materials - Germany 3. Gas, Illuminating - Insulation - Germany 4. Gas, Heating - Insulation - Germany.

Miscellaneous Chemicals

Mikromassanylse unter benūzung von diphenylcarbazid und diphenylcarbazon als indikator (merkurimetrie) (Micro-mass analysis by use of diphenyl-carbazide and diphenyl-carbazon as indicator (mercurimetry) and Merkurimetrische jodbestrimmung unter benūtzung von diphenylcarbazon als indikator (Mercurimetric iodine determination, using diphenyl-carbazon as indicator), by Z. V. Dubsky and J. Trtilek. Translated and edited by F. A. Raven. Feb 1954. 13p tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113613

Translated from Microchemie, vol. 12, p. 315-320 and vol. 15, p. 95-98.
1. Carbohydrazide, Diphenyl - Czechoslovakia 2. Carbazone, Diphenyl - Czechoslovakia 3. Microchemical analysis - Czechoslovakia 4. Indicators (Chemistry) - Color reactions - Czechoslovakia 5. Mercury ions - Reactions - Czechoslovakia 6. NAVSHIPS T550 7. STS 182a-b.

Paper chromatography of adrenocortical steroids, by Elwood H. Labrosse. U. S. Air Force. School of Aviation Medicine, Randolph Field, Texas. Dec 1953. 7p drawing, diagrs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113408

Methods for the separation and identification of 50 μg. amounts of adrenocortical steroids have been studied using several paper chromatographic techniques. The simple apparatus employed for these studies is described and illustrated. Water system, pure steroids, adrenal cortical, and urinary extracts were analyzed. AAF SAM Proj no. 21-4001-0002, Report no. 1.

Reactions of the sulfinyl group: The reaction of aromatic sulfinic esters with thionyl chloride and other alkoxide acceptors, by Richard T. Dickerson, Jr. and Harry F. Herbrandson. Rensselaer Polytechnic Institute, Troy, N. Y. n.d. 24p graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113439

1. Sulfinic acids, Aromatic esters - Reactions
2. Thionyl chloride - Reactions

Ultraviolet spectra of aromatic sulfinic acids and their derivatives, by Julius Weinstein and Harry F. Herbrandson. n.d. 14p graphs, table Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113440

1. p-Toluenesulfinic acid - Derivatives - Ultraviolet spectra 2. Benezenesulfinic acid - Derivatives - Ultraviolet spectra 3. Sulfinic acids, Aromatic esters - Derivatives - Reactions.

ELECTRICAL MACHINERY

Communication Equipment

Bericht über das amerikanischen funkgerät für fallschrimjäger 46/1 (Report on the American radio set for umbrella fighter-planes 46/1). Deutsche Versuchsanstalt für Luftfahrt, E. V. Institut für Elektrophysik. Aug 1944. 10f drawings, diagrs (Text in German) Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Enlargement Print $2.75. PB 113402

1. Radio, Airborne - Germany 2. Micro ZWB UM 2354.

Bericht über des britische dezimetergegensprechgerät für fellschwirmjäger (Report on the British microwave two-way radio set for umbrella fighter-planes). Deutsche Versuchsanstalt für Luftfahrt, E. V. Institut für Elektrophysik. Sep 1944. 7f photos, diagr (Text in German) Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Enlargement Print $2.75. PB 113403

1. Radio, Two-way - Germany 2. Micro ZWB UM 2352.

Investigation of atmospheric radio noise. Progress report no. 1, 30 Jun-30 Sep 1953, under Contract no. AF 19(604)-876, by A. W. Sullivan. Florida. Engineering and Industrial Experiment Station. Dept. of Electrical Engineering, Gainesville, Fla. Nov 1953. 39p photo, diagrs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $5.25. PB 113559

This initial report deals with the general problem of the measurement of atmospheric noise and the task of assessing the interference effect of atmospheric noise on communication systems. As a result of a study of the various parameters of atmospheric noise the first amplitude-probability function, the first moment, or average value, and the average number of noise pulses per second were chosen for investigation. These noise characteristics are most likely to be useful in describing the effect of noise on communication systems.

Übersicht der elektrisches funkgerät der französischen luftwaffe (Review of the electrical radio of the French Air Force). Deutsche Versuchsanstalt für Luftfahrt, E. V. Institut für Elektrophysik. Oct 1941. 57f photos, diagrs (Text in German) Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $3.00, Enlargement Print $9.00. PB 113401

Some frames may not reproduce well.
1. Radio, Airborne - France 2. Radio, Airborne - Germany.

Electronics

Automatic frequency control at short pulse lengths, by W. M. Cameron. National Research Council of Canada. Radio and Electrical Engineering Division. Nov 1953. 14p photos, diagrs (1 fold), graphs, tables Available from National Research Council of Canada, Ottawa, Canada. $.25. PB 113546

1. Radar - Control - Canada 2. Circuits, Automatic frequency control - Design - Canada 3. Phantastrons (Hard tube oscillators) - Canada 4. NRCC ERB 313 5. NRCC 3140.

Elementary considerations of the pinch effect in an ionized gas at low pressures carrying a high current, by Winston H. Bostick and Morton A. Levine. Tufts College. Dept. of Physics. Research Laboratory of Physical Electronics, Medford, Mass. Aug 1953. 10p diagr, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113332

A simple theory of the transient pinch effect is given in which it is assumed that the ionized gas is heated by the adiabatic magnetic compression as the current is increased. It is possible to express the diameter and the temperature of the pinch in terms of the current and other parameters of the discharge. Scientific report no. 9. Contract no. AF 19(122)-89.

High power microwave facilities of the RADC Research and Applied Techniques Laboratory, by P. A. Bryan and N. W. Fedrick. U. S. Air Force. Air Research and Development Command. Rome Air Development Center, Griffiss Air Force Base, Rome, N. Y. Jan 1954. 26p photos, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113484

1. Laboratories, Electronic - Equipment 2. Radar - Testing equipment 3. Radio frequency power - Supply units 4. Radio frequencies - Modulation 5. Wave guides - Components 6. AAF RADC TR 54-1.

Investigation of electronics targets in the Prague area. U. S. Army. Forces in the European Theater. Chief Signal Officer. Nov 1945. 51f photos, graphs Available from Library of Congress Publication Board Project, Washington 25, D. C. Microfilm $3.00, Enlargement Print $9.00. PB 113407

Intelligence report IFR-4.
1. Electronic equipment - Production - Czechoslovakia 2. AFE TO CSO IR4.

Mechanized production of electronics, vol. IV, by R. L. Henry, C. C. Rayburn, and J. G. Black. U. S. National Bureau of Standards. 1954. 85p photos, drawings, diagrs, graphs, table Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $4.00. PB 111278

Formerly known as Project Tinkertoy. For vols. I-III, V see PB 111275-111277, 111315.
1. Electronic equipment - Design 2. Electronic equipment - Production.

Drawings listed on p. 82 are described below. Order from Library of Congress, Publication Board Project, Washington 25, D. C., giving PB number of each part ordered.

Wafer notch painter. Jun 1951-Nov 1953. 350 drawings. Osalid $65.65. PB 111278s

NBS 1. Machine no. 2262. Drawn by Kaiser-Frazer Corporation, Detroit, Mich.

Wafer pattern printer. Jan 1952-Oct 1953. 678 drawings. Osalid $144.80. PB 111278s2

NBS 2. Machine no. 2263. Drawn by Kaiser-Frazer Corp., Detroit, Mich.

Capacitor pattern printer. Dec 1953-Jan 1954. 139 drawings. Osalid $26.15. PB 111278s3

NBS 3.

Wafer pattern firing furnace. Dec 1953. 2 drawings. Osalid $1.80 PB 111278s4

NBS 4. Contents: 5532-D-5668. Wafer metallizing furnace, schematic circuit. - Wafer pattern furnace.

Capacitor pattern firing furnace. Jul 1951-Dec 1953. 50 drawings. Osalid $14.95. PB 111278s5

NBS 5. Contents: List of drawings. - 5532-B-0461. Heating element assembled. - 5532-D-0503. Pulley belt, continuous belt furnace. - 5532-D-0504. Pulley belt, continuous belt furnace. - 5532-D-0509. Belt drive, continuous belt furnace. - 5532-D-0510. Capacitor metallizing furnace, wiring diagram. - 5532-X-0609. Base D. - 5532-B-0624. Spacer, drive pulley, continuous furnace. - 5532-B-0625. Roller support angle, continuous furnace. - 5532-B-0626. Roller support angle, continuous furnace. - 5532-B-0627. Roller support plate, continuous furnace. - 5532-B-0628. Fulcrum arm, continuous furnace. - 5532-B-0629. Drive and idler shaft, continuous furnace. - 5532-B-0630. Shaft, take up, continuous furnace. - 5532-B-0631. Spacer

block, continuous furnace. - 5532-B-0632. Motor sprocket, continuous furnace. - 5532-B-0633. Driver sprocket, continuous furnace. - 5532-B-0634. Driver sprocket, continuous furnace. - 5532-B-0635. Driver sprocket, continuous furnace. - 5532-D-0638. Base B, continuous belt furnace. - 5532-D-0639. Muffle frame 1-A, continuous belt furnace. - 5532-D-0640. Muffle frame 2-B. - 5532-D-0641. Base A. - 5532-D-0642. Muffle frame 3-C. - 5532-C-0644. Track support, continuous belt furnace. - 5532-C-0645. Track support, continuous belt furnace. - 5532-C-0646. Chain guard, continuous belt furnace. - 5532-C-0647. Rubber roller, continuous belt furnace. - 5532-D-0648. Track support. - 5532-C-0649. Door, sliding, continuous belt furnace. - 5532-D-0650. Base C. - 5532-D-0651. Frame 4 D, continuous belt furnace. - 5532-B-0653. Muffle stiffener box, continuous belt furnace. - 5532-B-0654. Vent tube, continuous belt furnace. 5532-C-0655. Door assembly, continuous belt furnace. - 5532-X-0656. Furnace assembly, continuous belt furnace, sheet 1 and sheet 2. - 5532-D-0657. Drawing list, continuous belt furnace. - 5532-X-0659. Muffle assembly. - 5532-B-0660. Angle terminal, continuous belt furnace. - 5532-B-0661. Strip, track "A". - 5532-B-0662. Angle, tract "A". - 5532-B-0663. Strip, track "B". - 5532-B-0664. Angle, track "B". - 5532-B-0665. Strip track "C". - 5532-B-0666. Angle, track "C". - 5532-B-0667. Strip, track "D". - 5532-B-0668. Angle, track "D' . - 5532-C-0669. End corners. - 5532-C-0670. Covers. - 5532-D-5671. Capacitor metallizing furnace.

Wafer pattern tester. Feb 1952-Dec 1953. 159 drawings. Osalid $35.80. PB 111278s6

NBS 6. Drawings made by Communication Measurements Laboratory, Inc., New York, N. Y.

Capacitor checker. Jan 1952-Nov 1953. 62 drawings. Osalid $14.25. PB 111278s7

NBS 7. All drawings are M861C2.

Capacitor surface tinner and wafer surface tinner. Mar-Jul 1952. 282 drawings. Osalid $45.65. PB 111278s8-9

NBS 8 and NBS 9. Drawings made by Donut Corp., Ellicott City, Md. Contents: NBS 8: Project no. 1, unit no. 2, Wafer surface tinner. - NBS 9: Project no. 1, unit no. 1, Capacitor surface tinner. - 5532-X-5661. Wafer tinner wiring diagram. - 5532-C-5664. Schematic circuit, capacitor tinner. - 5532-C-5665. Schematic circuit, wafer tinner. - 5532-X-5672. Capacitor tinner wiring diagram. - 5532-B-5673. Finger (inboard), surface tinner (wafer and capacitor). - 5532-B-5674. Finger (outboard), surface tinner (wafer and capacitor). - Project no. 1. - unnumbered drawing without title. - 52192. Variable speed control.- 52193. Speed reducer. - 52194. Speed reducer. - 52195. Sprocket, 2d reducer. - 52196. Sprocket, 1st reducer. - 52197. Sheave driven, 1st reducer. - 52198. Sheave, driven, reeves control. - 52199. Drive belt. - 52200. Sheave, drive-motor. - 52201. Sheave-drive, reeves control. - 52202. Drive belt. - 52203. Solder pot. - 52204. Parts feeder. - 52206. Pump, rinsing bath. - 52207. Relay, solder pot control. - 52208. Motor, 1/4 H. P. - Drive. - 52209. Motor, 1/6 H. P. Pump drive. - 52210. Strip heater. - 52211. Thermostat, heater control, project no. 1. - 52212. Flexible coupling, pump drive. - 52213. Solenoid valve. - 52214. Switch, air valve. - 52215. Pipe bushing. - 52216. 90^{o} street elbow 1/4" pipe. - 52217. 1/4" pipe coupling, tank inlet. - 52218. 3/4" pipe coupling, tank outlet. - 52219. 3/4" pipe half coupling, drain. - 52220. Bottle. - 52221. Stopper storage bottle. - 52222. Stopper, storage bottle. - 52223. Air compressor. - 52224. Slug pickup assembly. - 52225. Finger slug pickup, project 1, units 1 and 2. - 52226. Shaft, slug pickup. - 52227. Rivet, slug pickup assembly. - 52228. Pin, slug pickup assembly. - 52229. Cam blank. - 52231. Machine frame. - 52232. Bed plate, machine frame. - 52234. Disc-top, turntable. - 52236. Hub, turntable. - 52237. Boss, turntable hub. - 52238. Plate, turntable hub. - 52239. Bracket, pickup lever fulcrum. - 52240. Boss, pickup shaft. - 52241. Lever, slug pickup. - 52242. Bushing, pickup lever. - 52243. Lever, welded assembly. - 52244. Block, lever fork. - 52245. Arm, pick-up lever. - 52246. Hub, pickup lever. - 52247. Boss, pickup lever. - 52248. Pin, pickup lever. - 52249. Roller, pickup lever. - 52250. Roller, pickup lever. - 52251. Bushing, pickup lever roller. - 52252. Shaft, pickup lever. - 52253. Stud, pickup lever roller. - 52254. Key, slug pickup shaft. - 52255. Cup washer, hub support. - 52256. Thrust bearing, turntable hub. - 52257. Key, turntable hub. - 52258. Spring, pickup lever. - 52259. Drill jig, turntable disc. - 52260. Stud, pickup lever spring. - 52261. Tank, welded assembly, first bath. - 52262. Tank, first bath. - 52263. Bracket, tank, first bath. - 52264. Tank welded assembly, 2d bath. - 52265. Tank, 2d bath. - 52266. Shim, 2d bath. - 52267. Stand pipe, first bath. - 52268. Stand pipe, 2d bath. - 52269. Plate, machine frame. - 52270. Plate, machine frame, project no. 1. - 52271. - 52276. Angle, machine frame. - 52277. Frame angle, reducer support. - 52278. Frame angle, reducer support. - 52279. Gusset, machine frame. - 52280. Clip, cam frame support. - 52281. Clip, cam frame support. - 52285. Air tank assembly, complete. - 52286. Air tank, welded assembly. - 52287. Chute, bottom bar, project no. 1. - 52288. Chute guide, project 1, unit 1. - 52289. Pop safety valve. - 52290. Lower shim, corner trim, R. H. - 52291. Body, air tank. - 52292. Top plate, air tank. - 52293. Support plate, air tank. - 52294. Bottom plate, air tank. - 52295. Boss, air tank. - 52296. Lower shim, corner trim, L. H. - 52297. Bracket, pickup cam. - 52298. Bracket, pickup cam. - 52299. Bracket assembly, heater support. - 52300-52302. Bracket, heater support. - 52303. Assembly, reflector. - 52304. Reflector bracket. - 52305. Reflector back. - 52306. Reflector flange. - 52307. Frame assembly, cam support. - 52308. Angle, cam support frame. - 52309. Panel box assembly, complete. - 52310. Assembly panel box. - 52311. Back, panel box. - 52312. End, R. H., panel box. - 52313. End, L. H., panel box. - 52314. Switch support,

panel box. - 52315. Door, panel box. - 52316. Switch plate panel box. - 52317. Insulation switch. - 52318. Insulation switch. - 52319. Switch, project 1, units 1 and 2. - 52320. Switch, project 1, units 1 and 2. - 52321. Fuse block, project 1, units 1 and 2. - 52323. Door knob, switch box. - 52324. Wiring diagram, project 1, units 1 and 2. - 52325. Exhaust, hood. - 52326. Gusset, cam support frame. - 52327. Plate, cam support, pickup and release. - 52328. Bracket, slug discharge cam. - 52329. Bracket, slug discharge cam. - 52330. Bracket, switch support, 1st bath. - 52331. Bracket, switch support, solder pot. - 52332. Bracket, switch support, 2d bath. - 52333. Cam, slug pickup. - 52334. Cam, slug discharge. - 52335. Stud, cam support plate. - 52336. Chute support, discharge end. - 52337. Chute spacer, feed end. - 52338. Chute, slug discharge. - 52339. Spacer, strip heater. - 52340. Support, vertical reducer. - 52341. Block, pump support. - 52342. Floor plate. - 52343. Shaft, speed adjusting. - 52344. Outboard bearing, adjusting shaft. - 52345. Cam, segment no. 1. - 52346. Cam, segment no. 2. - 52347. Cam, segment no. 3. - 52348. Cam, segment 4-1. - 52349. Cam, segment 4-2. - 52350. Cam, segment 4-3. - 52351. Cam, segment 4-4. - 42352. Cam, segment 4-5. - 42353. Cam, segment no. 5. - 52354. Cam, segment no. 6-1, no. 8-1. - 52355. Cam, segment no. 6-2, no. 8-2. - 52356. Cam, segment no. 6-3, no. 8-3. -52357. Cam, segment no. 6-4, no. 8-4. - 52358. Cam, segment no. 6-5, no. 8-5. - 52359. Cam, segment no. 7. - 52360. Cam, segment no. 9. - 52361. Support, feeder unit 1. - 52362. Nozzle, air blast. - 52363. Pipe bushing, 1/4" to 1/8". - 52364. Tube connector. - 52365. Half union coupling. - 52366. Union nut. - 52367. Flexible tube connection. - 52368. Nozzle, bath inlet. - 52369. Pipe bushing, 3/4" to 1/4", bath. - 52370. 1/4" brass cock. - 52371. Pressure regulator. - 52372. Air gauge. - 52373. Sliding window, front. - 52374. Sliding window, rear. - 52375. Sliding window, side. - 52377. Sliding door, side. - 52378. Finger plate, sliding door. - 52379. Assembly, sliding door, rear. - 52380. Sliding door, rear. - 52381. Assembly, case, front. - 52382. Case, front. - 52383. Angle, case front. - 52384. Case, L. H. - 52385. Case, R. H., project no. 1, units 1 and 2. - 52386. Case, rear. - 52387. Vertical corner trim, rear. - 52388. Vertical corner trim, front, short. - 52389. Vertical corner trim, front, long. - 52390. Access door. - 52391. Access door. - 52392. Door channel, lower side. - 52393. Door channel, top side. - 52394. Door channel, top rear. - 52395. Door channel, lower rear. - 52396. Glass channel, top, front and rear. - 52397. Glass channel, lower side. - 52398. Glass channel, top side. - 52399. Glass channel, lower front and rear. - 52400. Door hinge, stationary part. - 52401. Door hinge, door part. - 52402. Assembly, door hinge. - 52403. Case door pin. - 52404. Door spring. - 52405. Case, front. - 52406. Slug, for testing. - 52407. Plate, cam support. - X-52407 sheet 1-2. Project no. 1, unit no. 1: Capacitor surface tinner. - 52536. Bracket, solder pot. - 52537. Cam, segment no. 1. - 52538. Cam, segment no. 2. - 52539. Cam, segment no. 9. - 52540. Shaft, slug feed drive. - 52541, 52543. Bevel gear and pinion-feeder drive. - 52550. Bearing support indexing mechanism. - 52551. Lever, indexing ratchet. - 52553. Bracket, slug discharge cam. - 52554. Bracket, slug discharge cam. - 52555. Stud, solenoid link. - 52556. Stud, solenoid link. - 52557. Pawl, indexing ratchet. - 52558. Washer indexing mechanism. - 52559. Washer, ratchet lever. - 52560. Shaft drive, indexing mechanism. - 52561. Shaft driven, indexing mechanism. - 52562. Solenoid, indexing mechanism. - 52563. Gear, indexing, mechanism. - 52564. Ratchet, indexing mechanism. - 52565. Wheel, indexing mechanism. - 52566. Link solenoid. - 52567. Shim, plate support. - 52568. Bracket, pickup cam. - 52569. Bracket, pickup. - 52570. Bushing, indexing mechanisms. - 52571. Set collar, indexing mechanism. - 52572. Stop, solenoid link. - 52573. Stud, solenoid spring. - 52574. Bracket, air valve. - 52575. Plate, indexing mechanism. - 52576. Chute, feed. - 52577. Support, feeder. - 52578. Spacer, air valve. - 52579. Plate, cam support, pickup and release. - 52587. Stud, cam support plate. - 52588. Stud, indexing support plate. - 52589. Shaft, slug pickup. - 52590. Slug pickup assembly. - 52591. Bracket, infeed chute. - 52605. Schematic drive. - 52607-52608. Case, door guide support. - 52609. Bracket, thermostat. - 52610. Plate, cam support. - 52611. Cam, slug pickup shaft. - 52612. Cover plate, case R. H. - 52613. Chute. - 52614. Clip, chute. - 52615. Knob. - 52620. Strainer, bath intake. - 52622. Tube, bath overflow connection. - 52812. Angle shield (rear) soldering pot. - 82813. Plate, shield (rear) soldering pot. - 52814. Shield assembly (rear) soldering pot. - 52815. Angle, shield (front) soldering pot. - 52816. Plate, shield (front) soldering pot. - 52817. Shield assembly (front) soldering pot. - 521174. Finger, slug pickup. - 521175. Cam, slug pickup. - 521176. Bracket slug pickup cam. -521177. Guide, infeed chute. - 521178. Assembly, slug infeed chute. - 521179. Guide, infeed chute. - 521262. Sprocket-drive, accumulator. - 521492. Support, parts feeder. - 521493. Support, feeder. - 521494. Chute, feed. - 521495. Cover, feed chute. - 521496. Shaft, feed chute cover. - 521497-521499. Link, feed mechanism. - 521500, Lever, feed mechanism. - 521501. Arm-lever, feed mechanism. - 521502. Boss-lever, feed mechanism. - 521503. Bracket, feed mechanism. - 521504. Stud-bracket, feed mechanism. - 521505. Pin, feed mechanism. - 521506. Shaft, feed mechanism. - 521507. Gate, feed mechanism. - 521508. Sliding window,front. - 521509. Case, front. - 521510. Bracket, microswitch. - 521511. Chute, wafer discharge. - 521512. Catch box, wafer discharge.

Resistor tape applicator. Sep 1951-Nov 1952. 219 drawings. Osalid $43.30. PB 111278s10

NBS 10. Machine no. 2266. Drawn by Kaiser-Frazer Corporation.

Capacitor assembler. Dec 1951-Oct 1953. 473 drawings. Osalid $100.50. PB 111278s11

NBS 11. Machine no. 2267. Drawn by Kaiser-Frazer Corp., Detroit, Mich.

111278s12 not published.

Wafer notch tinner. Apr-Dec 1953. 108 drawings Osalid $19.80. PB 111278s13

NBS 13. Contents: NBS 13-1002. Carrier wafer. - NBS 13-1003. Index head. - NBS 13-1004. Bearing mounting plate guide support. - NBS 13-1005. Guide mounting plate. - NBS 13-1006. Support switch. - NBS 13-1007. Support control switch. - NBS 13-1008. Mount switch. - NBS 13-1009. Chute-wafer exit. - NBS 13-1010. Support chute. - 5532-C-5321-5326. Solder pot. - 5532-C-5435-5443. Feed mechanism. - 5532-B-5444-5457. Wafer pickup. - 5532-C-5459-5463. Index head. - 5532-D-5523. Pick-up mechanism assembly. - 5532-C-5524-B-5541. Pick-up mechanism. - 5532-C-5555. Flux pot assembly. - 5532-B-5556-5561. Flux pot. - 5532-C-5563. Solder pot. - 5532-B-5564. Notch tinner, elevator shaft. - 5532-B-5565. Notch tinner, rib. - 5532-B- 5566. Notch tinner, Rib. - 5532-X-5568. Table frame. - 5532-D-5569. Table. - 5532-D-5570. Table. - 5532-B-5571. Pick-up mechanism connecting rod. - 5532-B-5572. Solvent pot. - 5532-B-5573. Table. - 5532-C-5574. Trip mechanism and index mechanism. - 5532-B-5575-5576. Trip mechanism. - 5532-B-5577. Index mechanism. - 5532-B-5578. Trip mechanism. - 5532-B-5579. Index mechanism. - 5532-B-5580. Trip mechanism. - 5532-C-5581. Wafer pick-up. - 5532-C-5587-5589. Notch tinner. - 5532-B-5590. Cleaning station. - 5532-X-5591. General arrangement. - 5532-D-5592. Index of drawings. - 5532-C-5594. Control box. - 5532-B-5595. Pick-up mechanism. - 5532-D-5597. Notch tinner. - 5532-D-5599. Lever control and escapement mechanism assembly. - 5532-C-5600-5604. Level control and escapement mechanism. - 5532-B-5606. Index head. - 5532-B-5607. Notch tinner. - 5532-B-5608. Index head. - 5532-X-5653. Wiring diagram. - 5532-C-5654. Wiring diagram.

Resistor curing furnace. Dec 1953. 30 drawings Osalid $9.20. PB 111278s14

NBS 14. Contents: Assembly sheet. - 5532-X-5162. Plan and elevation. - 5532-X-5163. Steel frame. - 5532-X-5164. Steel frame. - 5532-D-5165. Liner. - 5532-D-5166. Vent ducts. - 5532-C-5167. Carriage assembly. - 5532-C-5168. Oven doors. - 5532-B-5169. Oven details. - 5532-B-5170. Resistor furnace, idler strap. - 5532-B-5171. Wire pulley support. - 5532-B-5172. Wear plates. - 5532-B-5173. Carriage pulley. - 5532-B-5174. Carriage strap. - 5532-B-5175. Carriage shaft. - 5532-X-5652. Schematic circuit. - 5532-D-5250. Resistor curing furnace. - 5532-B-5250. Horizontal gusset. - 5532-B-5261. Vertical gusset no. 2. - 5532-B-5262. Vertical gusset no. 1. - 5532-B-5263. Lower gusset. - 5532-D-5264. Divider plate. - 5532-D-5265. Feed mechanism assembly. - 5532-D-5267. Feed assembly. - 5532-B-5305. Brace. - 5532-B-5306. Escapement. - 5532-B-5307. Cam. - 5532-B-5308. Pins. - 5532-B-5309. Lever. - 5532-C-5312. Resistor curing furnace.

Capacitor assembly tester. Jul 1951-Dec 1953. 99 drawings. Osalid $35.10. PB 111278s15

NBS 15. Drawn by Communications Measurements Laboratory, Inc., New York, N. Y.

Resistor assembly testor. Jun 1951-Dec 1953. 334 drawings. Osalid $68.20. PB 111278s16

NBS 16.

Tube socket assembler. Oct 1951-Jan 1954. 897 drawings. Osalid $199.50. PB 111278s17

NBS 17. Machine no. 2265. Drawn by Kaiser-Fraser Corp., Detroit, Mich.

Module assembler. Aug 1951-Dec 1952. 581 drawings. Osalid $129.55. PB 111278s18

NBS 18. Machine no. 2268. Drawn by Kaiser-Frazer Corporation, Detroit, Mich.

Module tester. May 1952-Nov 1953. 156 drawings. Osalid $28.75. PB 111278s19

NBS 19. Contents: Module tester, list of drawings and detailed parts. - 8353-200. Socket contact body. - 8353-201. Contact bar. - 8353-202. Stop washer. - 8353-203. Contact disc. - 8353-204. Socket contact head. - 8353-205. Socket contact pin. - 8353-206. Contact spring. - 8353-207. Socket contact body assembly. - 8353-208. Socket contact assembly, 7 pin. - Socket contact assembly (9). - 8353-210. Socket contact body (9). - 8353-211. Contact disk (9). - 8353-212. Socket contact head (9). - 8353-213. Riser contact mounting plate. - 8353-214. Riser contact assembly. - 8353-215. Contact stiffener. - 8353-216. Riser contact stop. - 8353-217. Riser contact plate assembly. - 8353-218. Tilting guide assembly. - 8353-611. Spacer. - 8353-219. Floor. - 8353-220. Guide side plate. - 8353-221. Cleat. - 8353-222. Chute sub-assembly. - 8353-223. Stop. - 8353-224. Solenoid bracket. - 8353-225. Chute divider. - 8353-226. Gate. - 8353-227. Switch assembly. - 8353-228. Bracket, L. H. - 8353-229. Bracket, R. H. - 8353-230. Cover. - 8353-231. Arm. - 8353-232. Pusher solenoid bracket. - 8353-233. Rack guide. - 8353-234. Pusher. - 8353-235. Rack. - 8353-236. Cam. - 8353-237. Gear. - 8353-238. Leaf. - 8353-239. Brush holder support. - 8353-240. Actuator plate top. - 8353-241. Actuator plate bottom. - 8353-242. Actuator spacer, lower. - 8353-243. Actuator spacer, upper. - 8353-244. Center rack. - 8353-245. Pin. - 8353-246. Tip. - 8353-247. Center rack assembly. - 8353-248. Plug and rack. - 8353-249. Spacer. - 8353-250. Gear. - 8353-251. Spacer screw. - 8353-252. Housing. - 8353-253. Spacer. - 8353-254. Rack stop. - 8353-255. Rack holder. - 8353-256. Gear. - 8353-257. Arm. - 8353-258. Stop. - 8353-259. Link. - 8353-260. Solenoid bracket. - 8353-261. Locator. - 8353-262. Hinge. - 8353-263. Shelf. - 8353-264. Wall. - 8353-265. Hinge pin. - 8353-266. Hinge pin. - 8353-267. Hinge pin. - 8353-268. Pipe. - 8353-269. Brush

holder. - 8353-270. Housing. - 8353-271. Brush holder. - 8353-272. Brush. - 8353-273. Brush holder assembly (9). - 8353-274. Housing, 9 pin. - 8353-275. Bracket. - 8353-276. Support. - 8353-277. Rotary switch. - 8353-278. Spacers. - 8353-279. Brace. - 8353-280. Support, L. H. - 8353-281. Support, R. H. - 8353-282. Support, small. - 8353-283. Angle bracket. - 8353-284. Pointer. - 8353-285. Shaft. - 8353-286. Reset switch assembly. - 8353-287. Button. - 8353-288. Bracket. - 8353-289. Arm. - 8353-290. Bracket. - 8353-291. Plate. - 8353-292. Wheel. - 8353-293. Bracket. - 8353-294. Ring. - 8353-295. Plug. - 8353-296. Collar. - 8353-297. Card contact assembly. - 8353-298. Cover. - 8353-299. Cover. - 8353-300. Back plate. - 8353-301. Front plate. - 8353-302. Top support. - 8353-303. Bottom support. - 8353-305. Pusher assembly. - 8353-306. Release mechanism assembly. - 8353-307. Lower chute assembly. - 8353-308. Lower chute. - 8353-309. Chute guide. - 8353-310. Chute. - 8353-311. Relay mounting plate. - 8353-312. Relay mounting ring. - 8353-313. Side plate. - 8353-314. Panel. - 8353-315. Angle bracket. - 8353-316. Relay mounting bracket. - 8353-317. Cover. - 8353-318. Standard plug assembly. - 8353-319. Housing. - 8353-320. Support. - 8353-321. Chassis support. - 8353-322. Chassis support. - 8353-323. Angle support. - 8353-324. Plug bracket. - 8353-325. Front support. - 8353-326. Support. - 8353-327. Reject stepper assembly. - 8353-328. Counter assembly. - 8353-329. Counter. - 8353-330. Name plate. - 8353-331. 456 K. C. generator and 20 volt bridge supply. - 8353-332. Relay and solenoid PWR supplys. 8353-400. Test head assembly. - 8353-401. Mounting plate. - 8353-402. Power supply plate. - 8353-403. Relay unit panel. - 8353-404. Power supply panel. - 8353-405. General arrangement. - 8353-406. Relay chassis. - 8353-407. Chassis layout for A. C. and D. C. detector and switching. - 8353-408. Schematic for A. C. and D. C. detectors and switching. - 8353-500. Mechanism test assembly. - 8353-501. Test head and indicator unit wiring diagram. - 8353-600. Name plate. - 8353-601. Name plates. - 8353-602. Name plate. - 8353-603. Main switch plate. - 8353-604. Solenoid switch plate. - 8353-605. Dial plate. - 8353-606. Name plate. - 8353-607. Name plate. - 8353-608. Tinker Toy for bridge chassis. - 8353-609. Generator and D. C. bridge supply. - 8353-610. Rotary switch. - 8353-612. Tinker Toy for bridge and comparator circuit.

Module trimmer. April 1952-Dec 1953. 337 drawings. Osalid $103.00. PB 111278s20

NBS 20. Machine number 22616. Drawings made by Kaiser-Frazer Corp.

Wafer loader (steatite). Dec 1953. 27 drawings. Osalid $5.70. PB 111278s21

NBS 21. Contents: Assembly sheet. - 5532-D-0855. Assembly kiln setter. - 5532-B-0856. Slug plate. - 5532-B-0857. Vibrator frame. - 5532-B-0858. Stiffner. - 5532-B-0859. Gusset. - 5532-B-0860. Brackets. - 5532-B-0861. Supports. - 5532-B-0862. Spring return. - 5532-B-0863. Springs. - 5532-B-0864. Guide plate support. - 5532-B-0865. Post. - 5532-B-0866. Handle. - 5532-B-0867. Blocks. - 5532-C-0868. Base. - 5532-C-0869. Guides. - 5532-C-0870. Trip plate. - 5532-C-0871. Base plates. - 5532-C-0872. Wall bracket. - 5532-D-0873. Separator. - 5532-D-0874. Guide plate. - 5532-X-0875. Track layout. - 5532-B-0876. Drawing list. - 5532-B-0877. Tray frame. - 5532-B-0878. Bracket shaft. - 5532-B-0879. Pin. - 5532-B-5666. Wafer loader.

Steatite kiln. Jun 1951-Dec 1953. 87 drawings. Osalid $20.80. PB 111278s22

NBS 22. Contents: 5532-B-0181. Steatite kiln. 5532-C-0182. Car base. - 5532-C-0183. Support plate. - 5532-C-0184. Support plate. - 5532-C-0185. Support plate. - 5532-B-0186. Center support. - 5532-B-0187. Mounting ear. - 5532-B-0188. Support. - 5532-B-0189. Clamping ear. - 5532-B-0190. Chain angle track spacer. - 5532-B-0191. Gusset plate. - 5532-B-0192. Take-up base. - 5532-B-0193. Drive unit support bracket. - 5532-B-0194. Take-up support bracket. - 5532-B-0195. Steatite kiln. - 5532-B-0196. Bracket. - 5532-B-0197. Chain support. - 5532-B-0198. Bracket. - 5532-C-0199. Drive unit skids. - 5532-B-0200. Drive unit brace. - 5532-C-0201. Motor base. - 5532-B-0202. Drive unit support. - 5532-B-0203. Take-up support bracket. - 5532-X-0204. Weldment assembly (Ends). - 5532-X-0205. Base, S-unit. - 5532-X-0206. Base, E.-P. - 5532-X-0207. P and C units, chamber frame. - 5532-X-0208. Base, E-C. - 5532-X-0209. Base E. - 5532-X-0210. Base G1, G2, C. - 5532-X-0211. G2, 1 chamber-frame. - 5532-B-0213. Support strip. 5532-B-0214. Terminal board. - 5532-B-0215. Element cover. - 5532-B-0216. Terminal board. - 5532-B-0217. Entrance and exit plate. - 5532-B-0218. Top. - 5532-B-0219. Side covers. - 5532-B-0220. Insulating plate. - 5532-B-0221. Element cover. - 5532-B-0222. Support strip. - 5532-C-0223. Side. - 5532-C-0224. Top. - 5532-C-0225. Insulating plate. - 5532-C-0226. Insulating plate. - 5532-C-0227. Top. - 5532-C-0228. Insulating plate. - 5532-D-0229. Drawing and part list. - 5532-D-0249. General arrangement of continuous furnace. - 5332-C-0262. Bricking form G-1, G-2. - 5532-C-0263. Tachometer drive. - 5532-B-0264. Tachometer adapter. - 5532-B-0265. Tachometer adapter base. - 5532-B-0266. Tachometer generator spacer block. - 5532-B-0267. Tachometer dial bracket. - 5532-B-0296. Plate, link. - 5532-B-0297. Stud. - 5532-B-0298. Washer. - 5532-B-0299. Rod, push. - 5532-B-0300. Spacer, take-up. - 5532-B-0301. Plate, cover, motor. - 5532-B-0302. Speed control, BRG plate. - 5532-B-0303. Sprocket, drive. - 5532-B-0304. Sprocket, motor. - 5532-B-0305. Speed extension shaft. - 5532-B-0393. Plate. - 5532-B-0394. Pin. - 5532-B-0395. Washer. - 5532-B-0396. Spacer. - 5532-C-0403. Carbofrax sagger. - 5532-B-0407. Axle, caster continuous furnace. - 5532-B-0408. Spacer, castor continuous furnace. - 5532-B-0413. Wheelco controller, 1600° (4) and 3000° (2) type continuous furnace. - 5532-B-0414. Support, control panel. - 5532-B-0433. Steatite kiln. - 5532-B-0434. Strap, support, vertical

continuous furnace. - 5532-D-0443. Cabinet controller. - 5532-D-0442. Cabinet controller (detail). - 5532-B-0562. Meter panel, double continuous furnace. - 5532-B-0563. Meter panel, single continuous furnace. - 5532-B-0610. Silmonite frame continuous furnace. - 5532-B-0611. Silmonite block. - 5532-D-0671. Continuous furnace car, assembly. - 5532-B-0672. Post. - 5532-D-0704. Car guide. - 5532-D-5655. Wafer kiln schematic circuit.

Wafer gager, Steatite. Oct 1952-Dec 1953. 89 drawings. Osalid $12.60. PB 111278s23

NBS 23. Contents: Bill of material (9 sheets). - 5532-B-5667. Schematic circuit. - 521402. Syntron feeder. - 521523. Final assembly. - 521524. Bearing, fafnir no. 205TT. - 521525. Sprocket. - 521526. Sprocket. - 521527. Motor base. - 521528. Drive motor. - 521529. Pulley, drive motor. - 521530. Sheave-driven. - 521531. Drive belt. - 521532. Drive belt. - 521533. Sheave. - 521534. Sheave. - 521536. Bearing. - 521537. Bearing. - 521538. Disc, 1st wheel. - 521539. Disc, 2d and 4th wheel. - 521540. Support ring wafer discharge. - 521541. Disc, 3d and 5th wheel. - 521543. Ejector assembly, 3d wheel. - 521544. Support ejector, 3d wheel. - 521545. Ejector, 3d and 5th wheel. - 521546. Ejector assembly, 5th wheel. - 521547. Support-ejector, 5th wheel. - 521548. Shaft. - 521549. Shaft, 1st wheel. - 521550. Shaft, 2d wheel. - 521551. Shaft, 3d wheel. - 521552. Shaft, 4th wheel. - 521553. Shaft, 5th wheel. - 521555. Shaft. - 521556. Nut. - 521557. Nut. - 521558. Frame assembly. - 521559. Jacking bar. - 521560. Bearing plate, lower frame, R. H. - 521561. Bearing plate, lower frame, L. H. - 521562. Plate, feed support. - 521563. Plate, drive support. - 521564. Vertical angle, R. H. - 521565. Vertical angle, L. H. - 521566. Angle, horizontal, feed support. - 521567. Bearing plate, R. H. - 521568. Bearing plate, L. H. - 521569. Spacer, 1st wheel. - 521570. Spacer, 2d and 4th wheel. - 521571. Spacer, 3d and 5th wheel. - 521572. Washer, 1st, 2d and 4th wheel. - 521573. Washer, 3d and 5th wheel. - 521574. Washer, 3d and 5th wheel. - 521575. Spacer-ejector, 2d wheel. - 521576. Support, ejector blade, 1st wheel. - 521577. Ejector blade, 1st wheel. - 521578. Ejector bar, 2d and 4th wheel. - 521579. Reject spacing bar, 2d wheel. - 521580. Reject spacing bar, 4th wheel. - 521581. Spacer, inspection wheel cap. - 521582. Spacer, inspection wheel cap. - 521583. Chute guide and adjusting block. - 521584. Bracket, chute support. - 521585. Leaf adjustment, wheels 2 and 4. - 521586. Spacer-guide and adjusting block. - 521587. Spacer-guide and adjusting block. - 521588. Base, feed and discharge chute, 1st wheel. - 521589. Support, chute base. - 521590. Feed chute, 1st wheel. - 521593. Feed chute, 2d wheel. - 521595. Base, feed chute, 3d wheel. - 521596. Support, chute base. - 521597 and 521598. Chute side, 3d and 5th wheel. - 521599 and 521600. Chute side, 3d and 5th wheel. - 521601. Bracket, hinged chute support. - 521602 and 521603. Chute side, 3d and 5th wheel. - 521604. Support, chute base. - 521605. Feed chute, 3d and 5th wheels. - 521606. Feed chute, 3d and 5th wheels. - 521607. Shaft, feed chute. - 521616. Drive guard. - 521617. Spacer, 4th wheel bearing. - 521618. Spacer, 5th wheel bearing.

Photo-electric cell. Jan 1952-Jan 1954. 9 drawings. Osalid $1.75. PB 111278s24

NBS 25. Contents: Assembly sheet. - 5532-B-5251. Splitter tape. - 5532-D-5274. Photo-electric housing. - 5532-B-5275. Bottom cover bracket. - 5532-B-5276. Rear cover bracket. - 5532-B-5277. Exciter lamp cover. - 5532-C-5278. Bottom cover. - 5532-C-5279. Rear cover. - 5532-C-5598. Schematic circuit, photo-tube controller.

Resistor tape sprayer. Feb-Mar 1953. 69 drawings. Osalid $11.00. PB 111278s25

NBS 26. Contents: List of parts (2 sheets). - Assembly sheet. - 5532-D-5290. Tape sprayer assembly. - 5532-C-5291. Container. - 5532-B-5292. Adaptor. - 5532-B-5293. Inner support. - 5532-B-5294. Outer support. - 5532-B-5295. Pin. - 5532-B-5296. Stopper. - 5532-B-5297. Screw. - 5532-B-5298. Retainer. - 5532-B-5310. Shaft. - 5532-B-5311. Tailstock block. - 5532-B-5312. Coupling. - 5532-C-5313. Drum. - 5532-C-5314. Headstock block. - 5532-C-5315. Elevations. - 5532-D-5316. Sections. - 5532-B-5318. Carriage stop. - 5532-B-5342. Brace. - 5532-B-5343. Brace. - 5532-B-5344. Vertical frame members. - 5532-B-5345. Horizontal frame members. - 5532-B-5346. Plate. - 5532-B-5347. Plate. - 5532-B- 5348. Spacer. - 5532-C-5349. Window assembly. - 5532-B-5350. Side panel. - 5532-B-5351. Door, side panel. - 5532-B-5352. Upper right front panel. - 5532-B-5353. Door, upper right front panel. - 5532-B-5354. Lower front panel. - 5532-B-5355. Door, lower front panel. - 5532-B-5356. Left front panel. - 5532-B-5357. Door, left front panel. - 5532-B-5358. Right top. - 5532-B-5359. Left top. - 5532-B-5360. Rear panel. - 5532-B-5361. Rear door. - 5532-C-5364. Carriage block. - 5532-C-5366. Hood. - 5532-B-5368. Sash holder. - 5532-B-5369. Slide. - 5532-B-5370. Shaft. - 5532-B-5371. Shaft. - 5532-D-5372. Drum shield. - 5532-C-5404. Gears, screws, bearings. - 5532-B-5405. Sprocket, tape reel. - 5532-B-5406. Key, tape reel. - 5532-B-5407. Ring, tape reel. - 5532-B-5408. Ring, tape reel. - 5532-B-5409. Spacer, tape reel. - 5532-B-5410. Top cover, tape reel. - 5532-B-5411. Upper shaft. - 5532-B-5412. Gear, tape reel. - 5532-B-5413. Side, tape reel. - 5532-B-5414. Bushing, tape reel. - 5543-B-5415. Handle washer, tape reel. - 5543-B-5416. Handle, tape reel. - 5532-B-5417. Handle post, tape reel. - 5532-B-5418. Lower shaft , tape reel. - 5532-B-5419. Gear, tape reel. - 5532-B-5420. Base, tape reel. - 5532-B-5421. Pivot, tape reel. - 5532-B-5422. Spacer, tape reel. - 5532-B-5423. Guide, tape reel. - 5532-C-5434. Pan, spray machine. - 5532-C-5605. Schematic diagram, resistor tape sprayer.

Resistor tape slitter. Oct-Nov 1953. 36 drawings. Osalid $8.40. PB 111278s26

NBS 27. Contents: List of drawings and detailed parts. - 43-128. Assembly. - 43-129. Block shaft for removable head. - 43-130. Bushing for removable head. - 43-131. Friction disk spacer for removable head. - 43-132. Housing body for removable head. - 43-133. Drive pulley for take-up drive shaft. - 43-134. Individual shaft pulley for reel take-up shafts. - 43-135. Reel side piece for reel assembly. - 43-136. Take-up reel hub for reel assembly. - 43-137. Take-up reel shaft for reel assembly. - 43-138. Feeder reel hub. - 43-139. Feeder reel assembly for speed shaft. - 43-140. Sheaves for shive drive and reel drive. - 43-141. Dog latch for cutter head assembly. - 43-142. Drive gear for drive shaft for feeder reel assembly. - 43-143. Drive shaft for cutter head, main assembly. - 43-144. Motor base for motor, main assembly. - 43-145. Back plate for cutter head housing. - 43-146. Side plate for cutter head housing. - 43-147. End plate for cutter head housing. - 43-148. Roller guide for cutter head housing. - 43-149. Drive springs for take up reels. - 43-150. Front panel for tape slitter assembly. - 43-151. Back panel for tape slitter assembly. - 43-152. Cover plates for tape slitter assembly. - 43-153. Housing door for tape slitter assembly. - 43-154. Spacer for cutter head. - 43-156. Front and back panel braces for tape slitter assembly. - 43-157. Plate top for tape slitter assembly. - 43-158. Bracket motor control for tape slitter. - 53-159. Cabinet assembly. - 43-160. Spacer for plate top. - 43-161. Support duct for blower. - 43-162. Circular knife for cutter head assembly. - 43-163. Pulley drive shaft for cutter head assembly.

Connector strip process equipment. Jun 1951-Oct 1953. 385 drawings Osalid $77.65. PB 111278s27

NBS 28. Machine no. 22611. Drawn by Kaiser-Frazer Corp., Detroit, Mich.

Base plate screen printer (bench). Jun-Jul 1952. 25 drawings. Osalid $4.35. PB 111278s28

NBS 31. Contents: Screen printer, base plate (Title). - 5532-X-0759. Assembly. - 5532-B-0760. Bar, parallel. - 5532-B-0761. Shaft. - 5532-B-0762. Support, angle. - 5532-B-0763. Brace, rear. - 5532-B-0764. Brace, front. - 5532-B-0765. Nut, modified. - 5532-C-0766. Frame. - 5532-C-0767. Base. - 5532-B-0769. Collar, modified. - 5532-B-0782. Support, base. - 5532-B-0783. Support, base. - 5532-B-0784. Support, base. - 5532-B-0785. Support, base. - 5532-B-0786. Support, base. - 5532-B-0787. Spring. - 5532-B-0788. Brace, rear center. - 5532-B-0789. T nut. - 5532-C-0790. Jig plate. - 5532-C-0791. Yoke. - 5532-B-0792. Plug, center. - 5532-B-0793. Piller. - 5532-B-0794. Pin gage. - 5532-B-0795. Plate, yoke.

Punch, plain wafer top. Sep 1953. 1 drawing Osalid $.20. PB 111278s29

NBS 39. Drawing no. 5532-C-0844.

Punch, plain wafer bottom. Sep 1953. 1 drawing Osalid $.20. PB 111278s30

NBS 40. Drawing no. 5532-C-0846.

Die wafer. Jul 1952. 1 drawing. Osalid $.20.

NBS 41. Drawing no. 5532-C-0845. PB 111278s31

Capacitor die. Jul 1953. 1 drawing. Osalid $.20

NBS 42. Drawing no. 5532-C-5497. PB 111278s32

Punch capacitor top. Oct 1953. 1 drawing. Osalid $.20. NBS 43. Drawing no. 5532-C-5498. PB 111278s33

Punch capacitor bottom. Oct 1953. 1 drawing Osalid $.20. NBS 44. Drawing no. 5532-C-5496. PB 111278s34

Punch socket wafer top. Dec 1953. 1 drawing. Osalid $.20. NBS 45. Drawing no. 5532-C-0883. PB 111278s35

Punch socket wafer bottom. Dec 1953. 1 drawing Osalid. $.20. NBS 46. Drawing no. 5532-C-0884 PB 111278s36

Rod, small core wafer die. Dec 1953. 1 drawing. Osalid $.20. NBS 47. Drawing no. 5532-B-0882. PB 111278s37

Punch, potentiometer wafer top. Dec 1953. 1 drawing. Osalid $.20. NBS 48. Drawing no. 5532-C-0885. PB 111278s38

Punch, potentiometer wafer bottom. Dec 1953. 1 drawing. Osalid. $.20. NBS 49. Drawing no. 5532-C-0886. PB 111278s39

Rod, large core wafer die. Dec 1953. 1 drawing Osalid $.15. NBS 50. Drawing no. 5532-B-0881. PB 111278s40

Plate drying furnace. Jul 1952-Jan 1954. 24 drawings. Osalid $5.95. PB 111278s41

NBS 60. Contents: Title. - 5532-X-0797. General arrangement. - 5532-D-0798. Framework. - 5532-B-0799. Pulley drum. - 5532-B-0800. Pulley ends. - 5532-B-0801. Collar. - 5532-B-0802. Shaft. - 5532-B-0803. Spacer block. - 5532-C-0804. Top. - 5532-C-0805. End. - 5532-C-0806. Sides. - 5532-C-0807. Corner brace. - 5532-C-0808. Corner brace. - 5532-C-0809-0810. Center brace. - 5532-C-0811-0812. Top brace. - 5532-B-0813. Collar. - 5532-B-0814-0815. Bushing. - 5532-B-0816. Sprocket. - 5532-B-0817. Roller support. - 5532-B-0818. Support bar. - 5532-C-0819. Belt pan.

Photo spinner. Dec 1953. 15 drawings Osalid $3.95. PB 111278s42

NBS 61. Contents: Assembly. - 5532-B-0250. Turntable support. - 5532-B-0251. Motor support. - 5532-B-0252. Legs. - 5532-B-0253. Bracket. - 5532-B-0254. Block. - 5532-C-0255. Switch support. - 5532-C-0256. Lower frame. - 5532-C-0257. Middle frame. - 5532-C-0258. Top frame. - 5532-D-0259. Cover weldment and assembly. - 5532-D-0260. Lid weldment

and assembly. - 5532-D-0261. General arrangement. - 5532-D-0294. List of parts. - 5532-D-0370. Stainless steel cam.

On adiabatic amplification in the microwave region, by Gedaliah Held. California. University. Div. of Electrical Engineering. Electronics Research Laboratory, Berkeley, Calif. Jul 1953. 23p diagrs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113571

Institute of Engineering Research series no. 60, issue no. 100.
1. Adiabatic phenomena 2. Waves, Electromagnetic - Generation 3. Waves, Electromagnetic - Theory 4. UC IER Ser. 60, Issue no. 100.

Relationships involved in the H_z-E_ϕ pinch effect, by Winston H. Bostick and Morton A. Levine. Tufts College. Dept. of Physics. Research Laboratory of Physical Electronics, Medford, Mass. Sep 1953. 10p diagrs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113333

The transient H_z-E_ϕ type of pinch effect is treated in the same manner as in the E_z-H_ϕ type discussed in Scientific Report no. 9. A simple theory involving the assumption of an adiabatic magnetic compression of the gas is set forth. The diameter of the pinch and the temperature can be calculated in terms of the current and other of the discharge parameters. Scientific report no. 10. Contract no. AF 19(122)-89.

Generators, Motors, Transmission

Factors affecting the operation of spark noise generators, by R. H. Wilcox. U. S. Naval Research Laboratory. Feb 1954. 18p photos, drawings, diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113527

Spark noise generators, when operated at high recurrence rates, are characterized by erratic output, rather short periods of operation, and critical adjustments, largely because of electrode corrosion and lack of complete deionization between breakdowns. These effects can be reduced by operating in an SF_6 atmosphere, and the power level in any particular frequency and nonresonant containers. NRL R 4307.

Response testing of pulse transformers. Stanford Research Institute. Advanced Techniques Laboratory, Stanford, Calif. Final report covering period 15 Jan 1951 to 14 Mar 1953, under Contract no. DA36-039-sc-5447, by P. R. Gillette, K. Oshima, R. M. Rowe. May 1953. 266p photos, diagrs, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $9.25, Photostat $34.00. PB 113570

Dept. of the Army project no. 3-26-00-602. Signal Corps project no. 32-2006-3.
1. Transformers, Pulse - Tests 2. Circuits, Equivalent 3. SRI Proj 406 Final report 4. SIG Contract DA36-039-sc-5447 Final report.

25 jahre regelbare Preh widerstände, 1919-1944 (25 years of adjustable Preh resistors, 1919-1944). Preh, Joseph, Elektrofeinmechanischewerke, Bad Neustadt, Ger. Mar 1944. 35f drawing, diagr, graphs (Text in German) Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Enlargement Print $6.50. PB 113396

IB7023.
1. Resistors - Manufacture - Germany.

Miscellaneous

Beam-loading effects in small reflex klystrons, by W. W. Harman and J. H. Tillotson. Stanford University. Electronics Research Laboratory, Stanford, Calif. Sep 1948. 25p diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113492

Contract N6-onr-251, Consolidated task no. 7 (NR-075-036).
1. Vacuum tubes, Klystron - Theory 2. Electron beams - Loading effects 3. SU ERL TR 6.

Collinear antenna array: Theory and measurements, by Howard W. Andrews. Harvard University. Cruft Laboratory. Jul 1953. 84p diagrs, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $4.00, Photostat $11.50. PB 113574

The antenna array considered herein is an arrangement of a simple driven dipole and two parasitic elements with axes collinear to that of the driven element. A theoretical solution to the problem is obtained by considering the air gap between the elements to be a simple lumped capacitance of a size depending upon the spacing between the elements. The current distribution and the driving point impedance are computed for a variety of length as a function of the gap spacing. Measurements are given to check the validity of the theory and its range of practical application. Contract N5ori-76, Task order no. 1, NR-078-011. HU CL TR 178.

Contribution to network synthesis by potential analog by T. R. Bashkow. Stanford University. Electronics Research Laboratory, Stanford, Calif. Jun 1950. 88p diagrs, graphs Available from Library

of Congress, Publication Board Project, Washington 25, D. C. Microfilm $4.00, Photostat $11.50. PB 113507

Contract N6-onr-251, Consolidated task no. 7 (NR-078-360).
1. Networks, Electrical - Synthesis 2. Circuits, Electric - Analogies 3. SU ERL TR 25.

Electronic admittance of the reflex klystron in the presence of space charge, by Vernon B. Westburg. Stanford University. Electronics Research Laboratory, Stanford, Calif. Apr 1950. 79p diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $3.75, Photostat $10.25. PB 113505

Contract N6-onr-251, Consolidated task no. 7 (NR-078-360).
1. Vacuum tubes, Klystron 2. Admittances, Electrical 3. SU ERL TR 23.

Explicit forms of the propagation function of a traveling-wave tube, by James H. Tillotson. Stanford University. Electronics Research Laboratory, Stanford, Calif. Apr 1949. 22p graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113499

Contract N6-onr-251, Consolidated task no. 7 (NR-078-360).
1. Waves, Electromagnetic - Propagation - Theory 2. Vacuum tubes, Traveling wave - Theory 3. Excitation functions 4. SU ERL TR 13.

General method for synthesis of filter transfer functions as applied to L-C and R-C filter examples, by George L. Matthaei. Stanford University. Electronics Research Laboratory, Stanford, Calif. Aug 1951. 274p drawings, diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $9.25, Photostat $35.25. PB 113511

Contract N6onr-251, Consolidated task no. 7 (NR-078-360).
1. Fields, Electrostatic - Mathematical analysis 2. Networks, Electrical - Transfer characteristics 3. Networks - Filters - Theory 4. Circuits, Electric - Analogies 5. Filters, Band-pass 6. Filters, Electric - Theory 7. SU ERL TR 39.

Negative dispersion helix structure, by Edward M. T. Jones. Stanford University. Electronics Research Laboratory, Stanford, Calif. Aug 1950. 20p graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113508

Contract N6-onr-251, Consolidated task no. 7 (NR-078-360).
1. Helix - Mathematical analysis 2. Harmonic analysis 3. SU ERL TR 27.

Network analogue approach to the study of cavity resonator losses, by Frederick W. Schott. Stanford University. Electronics Research Laboratory, Stanford, Calif. Jun 1948. 24p diagrs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113490

The theory is developed for the investigation of resonant cavity losses by means of the network analogue. Expressions for cavity Q and shunt resistance are given in terms of analogous quantities which may be measured on the network. The method for representing the effect of both surface wall loss and dielectric loss is presented. An investigation is made of the possibility of having a zero of shunt resistance and a criterion is established. Contract N6-onr-251, Consolidated task no. 7 (NR-075-036). SU ERL TR 4.

Observations of space charge phenomena in a diode magnetron, by G. H. Geick. Stanford University. Electronics Research Laboratory, Stanford, Calif. Apr 1949. 29p photos, drawing, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113500

Plate current characteristics are shown for a wide variation of electric field, magnetic field, and pressure conditions. Regions of oscillation and certain microwave frequencies are recorded. Tuning curves are given showing the use of high-density magnetron space charge to tune a resonant cavity. Contract N6-onr-251, Consolidated task no. 7 (NR-078-360). SU ERL TR 14.

Survey of methods of determining the shunt resistance for klystron resonant cavities, by V. B. Westburg. Stanford University. Electronics Research Laboratory, Stanford, Calif. Nov 1948. 64p graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $3.25, Photostat $9.00. PB 113497

The definition for shunt resistance is presented and the basis and application of various types of circuit analogues to a general resonant cavity are discussed. The measured values on a given resonant cavity by certain of the methods are presented and the results evaluated. Contract N6-onr-251, Consolidated task no. 7 (NR-075-036). SU ERL TR 11.

300-1000 megacycle traveling wave tube amplifier, by H. C. Poulter. Stanford University. Electronics Research Laboratory, Stanford, Calif. Nov 1949. 57p photo, drawings, diagrs, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $3.00, Photostat $7.75. PB 113503

Experimentally measured gain, noise figure, variation of gain with current, and other data are given for two tubes. Theoretical field calculations for a helix surrounded by a dielectric layer are also presented. Contract N6-onr-251, Consolidated task no.

7 (NR-078-360). Portions of the report were taken from thesis of A. R. Margolin, "Development of a 300-1000 mc traveling wave amplifier." SU ERL TR 21.

FOOD AND KINDRED PRODUCTS

Aphydatosis, a promising process for drying foods and other products affected by high temperatures. Louisiana. Agricultural Experiment Station, Baton Rouge, La. Report no. 10 for period 1 Aug 1950 to 31 Mar 1952 under Contract no. DA 11-009-qm-409, by S. A. Kaloyereas. Mar 1952. 10p graph, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $.50. PB 111313

1. Food - Dehydration - Low temperature
2. Aphydatosis.

Electronic and radiological devices for sterilization, an abstract bibliography prepared by Francis D. Horigan and Florence H. Cozzi. U. S. Office of the Quartermaster General. Military Planning Division. Research and Development Laboratories. Technical Library. Jun 1953. 32p Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111328

1. Sterilization, Electronic - Bibliography 2. Sterilization, Radioinduced - Bibliography 3. Sterilization - Equipment - Bibliography 4. Food - Sterilization - Bibliography 5. QMC TL BS 30.

Manufacture of soluble and concentrated coffee, by Carl H. Moulton. U. S. Office of Technical Services. Mar 1954. 22p Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. $1.00. PB 111341

1. Coffee, Soluble - Manufacture 2. Coffee, Concentrated - Manufacture 3. OTS IR 12577 4. TAS-106.

Methods for improving the dispersibility of whole dry milk powder. Indiana. Agricultural Experiment Station. Dept. of Dairy Husbandry, Purdue University, Lafayette, Ind. Report no. 5, 1 Jun 1951-31 May 1952 under Contract no. DA-11-009-qm-10596, by H. A. Hollender. May 1952. 18p graphs, table Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $.50. PB 111312

Project 7-84-06-029.
1. Milk, Dehydrated - Emulsifying agents 2. Emulsifying agents - Evaluation.

FUELS AND LUBRICANTS

Development of qualification test methods for gear lubricants. Armour Research Foundation, Chicago, Ill. Progress report no. 17, Nov 15, 1953 to Dec 15, 1953, under Contract no. DA-11-022-ord-905, by H. Ruwe Barton. Dec 1953. 10p table Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113656

Project no. TB5-3010. Appendix A: Report to CLR Moisture Corrosion Sub-panel: Effect of bearing preload on moisture corrosion.
1. Gears - Lubrication - Corrosion tests 2. Lubrication - Testing equipment 3. ARF Proj L030-9 Report no. 17.

Friction and wear investigation of molybdenum disulfide. II: Effects of contaminants and method of application, by Marshall B. Peterson and Robert L. Johnson. U. S. National Advisory Committee for Aeronautics. Mar 1954. 19p photos, graphs, tables Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113433

1. Friction - Theory 2. Lubrication - Theory 3. Lubrication - Chemistry 4. Lubricants - Friction tests 5. Molybdenite - Use as a lubricant 6. U. S. Lewis Flight Propulsion Laboratory, Cleveland, Ohio 7. NACA TN 3111.

Gasification of pulverized coal with steam and oxygen at atmospheric pressure, by G. R. Strimbeck, J. B. Cordiner, Jr., N. L. Baker, J. H. Holden, K. D. Plants, and L. D. Schmidt. U. S. Bureau of Mines. Feb 1954. 73p photos, drawings, graphs, tables Available from U. S. Bureau of Mines, 4800 Forbes Street, Pittsburgh 13, Pennsylvania. PB 113436

1. Coal, Pulverized - Gasification 2. BM RI 5030.

Operational suitability test of preservative materials for use on machine guns installed in aircraft. U. S. Air Force. Air Proving Ground Command, Elgin Air Force Base, Fla. Final report, project no. APG/SSB/132-AB. Jun 1952. 24p photos Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113678

1. Guns, Aircraft - Coatings, Protective 2. Lubricating oils - Tests 3. Guns, Machine - Lubrication 4. APGC Proj APG/SSB/132-AB, Final report.

Probings into cool flames. Part I: Sampling studies, by K. G. Williams, J. E. Johnson, and H. W. Carhart. U. S. Naval Research Laboratory. Dec 1953. 19p diagr, graphs Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $.50. PB 111311

A stable n-hexane cool flame was established in a gaseous system flowing through a heated combustion tube. By axial probing of the length of the tube with a thermocouple and a gas sampling probe, measurements of the oxygen consumption at various points in relation to the flame front were obtained. It was

found that over a considerable spread of flow rates and probe diameters a minimum occurred in the measured oxygen profile at a point corresponding roughly to the maximum rate of heat liberation. An explanation for this phenomenon is developed on the basis of oxidation reactions occurring within the proble. NRL R 4249.

Study of the rust-preventive properties of greases, by Bernard Rubin and Robert J. Burger. U. S. Air Force. Air Research and Development Command. Wright Air Development Center. Materials Laboratory, Wright-Patterson Air Force Base, Dayton, Ohio. Mar 1953. 39p photos, drawing, graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111319

The results of the investigation indicate that certain properties such as high alkalinity and some water-emulsifiability with a degree of water resistance are useful in controlling the degree of corrosion protection which a grease affords, to a coated bearing surface. Some difference in corrosion protective qualities was noted among the different classes of diester greases studied. Fingerprint suppression appears to have a role in protection against corrosion of steel surfaces under service conditions. AAF TR 6386.

Thermodynamics of combustion gases: Temperatures of acetylene-air flames, by R. W. Smith, Jr., John Manton, and S. R. Brinkley, Jr. U. S. Bureau of Mines. Feb 1954. 16p tables Available from U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh 13, Pa. PB 113561

1. Combustion gas - Thermodynamic properties 2. Flame - Temperature - Measurement 3. Acetylene-air mixtures - Thermodynamic properties 4. BM RI 5035.

Verhalten der schmierölzähigkeiten bei hohen schergeschwindigkeiten (Behavior of lubricating oil viscosities at high shearing speeds), by W. Frössel. Translated and edited by F. A. Raven. Nov 1953. 10p drawing, graph Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113610

Translated from Forschung, vol. 14, no. 3, May-June 1943, p. 82-84.
1. Lubricating oils - Viscosity - Germany 2. NAVSHIPS T543 3. STS 175a.

INSTRUMENTS

Analytical and experimental study of the transient response of a pressure-regulating relief valve in a hydraulic circuit, by Harold Gold and Edward W. Otto. U. S. National Advisory Committee for Aeronautics. Mar 1954. 54p photos, drawings, graphs, table Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113431

1. Valves, Hydraulic - Controls 2. Hydraulic systems - Equipment 3. Fuel servicing equipment - Controls 4. U. S. Lewis Flight Propulsion Laboratory, Cleveland, Ohio 5. NACA TN 3102.

Commutating device for transforming shaft position into binary digit information, by Robert J. Sullivan and Warren Roberts. U. S. Air Force. Air Research and Development Command. Cambridge Research Center. Research Services Division, Cambridge, Mass. Nov 1953. 9p photos, diagrs Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111340

This note describes a 9-digit commutating device for coding shaft position in binary digit form. A feature of the design is the use of the "line contact" method for preventing bounce and-establishing clean and reliable contact between the brushes and tracks. AAF CRC TR 53-41.

Design and operation of an electronic temperature controller, by H. A. Ross and G. W. Gore. Australia. Commonwealth Scientific and Industrial Research Organization. Division of Meteorology. 1953. 32p photos, diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $5.25. PB 113477

Technical paper no. 2.
1. Temperature - Controls, Electronic - Design - Australia 2. Temperature - Controls, Electronic - Operation - Australia.

Diffuse light flare detector, by Fred E. Fowler and Donald S. Johnson. Harvard University. Harvard College Observatory. Solar Dept., Cambridge, Mass. Dec 1951. 19p diagrs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113382

Report describes the development of an electronic device for the detection of flares from their effects upon the spectrum of diffuse sunlight in Hα. HU HCO SR 41. Contract W19-122ac-17.

Electronic repeller voltage tracking circuit for reflex klystron oscillators, by John F. Honey. Stanford University. Electronics Research Laboratory, Stanford, Calif. Apr 1948. 26p diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113488

This report describes a fully electronic circuit designed to perform this function, and an analysis of circuit performance based on feedback circuit techniques is presented. Contract N6-onr-251, Consolidated task no. 7. SU ERL TR 2.

Insolation of the atmosphere. Rhode Island State College. Upper Air Research Laboratory, Kingston, R. I. Report no. 5 under Contract no. W-28-099-ac-377, by Arthur L. Quirk. Apr 1949. 39p photos, diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $5.25. PB 113514

1. Solar radiation - Measuring equipment 2. Atmosphere, Upper - Research 3. Pyrheliometers - Design 4. Thermistors - Design 5. Bolometers - Design.

Installation and calibration of infrared spectrometer, by Ralph G. Eldridge. Massachusetts Institute of Technology. Dept. of Meteorology. Jul 1952. 19p photos, drawing, diagrs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113524

Modification of a Perkin-Elmer Infrared Spectrometer into a double beam system for measurement of transmission in water clouds is described. A cloud chamber for laboratory testing of the spectrometer is also described. Contract no. AF 19(122)-245: Measurement of drop size distribution and liquid water content in natural clouds. Scientific report no. 2. MIT Met SR 2.

Long-period viscous-coupled vertical seismograph, by James T. Wilson. Michigan. University. Engineering Research Institute, Ann Arbor, Mich. Jul 1953. 16p photos, graph Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113531

Contract N8onr-69800, Project NR-081-088. Project M803, Final report.
1. Seismographs - Design.

Measurements of pressure and temperature for appraisal of the temperature method of airspeed calibration in the lower stratosphere, by Lindsay J. Lina. U. S. National Advisory Committee for Aeronautics. Mar 1954. 12p photo, diagrs, graphs Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113576

1. Stratosphere - Temperature - Measurement 2. Stratosphere - Pressure - Measurement 3. Air speed indicators - Calibration - Temperature method 4. U. S. Langley Aeronautical Laboratory, Langley Field, Va. 5. NACA TN 3075.

Repeller field shape as a factor in the design of broad-band reflex klystron oscillators, by Louis T. Zitelli. Stanford University. Electronics Research Laboratory, Stanford, Calif. May 1948. 47p diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.75, Photostat $6.50. PB 113489

In an effort to gain some information on the behavior of these quantities for non-linear drift fields, three special types of non-linear fields are considered and calculations of transit time and effective bunching parameters are made for these fields. Contract N6-onr-251, Consolidated task no. 7. SU ERL TR 3.

Upper atmosphere research report no. XX: Lightweight azimuth-correcting sun follower, by Harry L. Clark. U. S. Naval Research Laboratory. Dec 1953. 14p photos, drawings, diagrs, graphs Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. $.50. PB 111308

A single-axis sun follower was developed to provide azimuth stabilization for a special lightweight ultraviolet spectrograph. This sun follower can track the sun with errors of less than ± 0.7 degree of arc in the presence of rocket spins in either direction up to 120 rpm. NRL R 4267.

MACHINERY

Cutting speed versus tool life when shaping titanium with high-speed steel tools, by L. V. Colwell and R. E. McKee. Michigan. University. Engineering Research Institute, Ann Arbor, Mich. Jan 1953. 21p photos, drawing, graphs, table Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111299

Contract no. DA-20-018-ord-11918. Project M993, Report no. 5.
1. Titanium - Milling 2. Tools, Cutting - Life expectancy 3. Tools, Cutting - Speed 4. WAL R 401/109-5.

Effect of size of cut on tool life in turning titanium, by L. V. Colwell. Michigan. University. Engineering Research Institute, Ann Arbor, Mich. Jan 1953. 56p graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.25. PB 111298

Contract DA 20-018-Ord-11918. Project M993, Report no. 4.
1. Titanium - Milling 2. Tools, Cutting - Life expectancy 3. Tools, Cutting - Speed 4. Tools, Cutting - Effect of size of cut 5. WAL R 401/109-4.

Effect of side rake angle on tool life in turning titanium (high-speed-steel tools), by L. V. Colwell. Michigan. University. Engineering Research Institute, Ann Arbor, Mich. Jan 1953. 62p photos, graphs Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.50. PB 111297

Contract no. DA-20-018-ord-11918. Project M993, Report no. 3.

1. Titanium - Milling 2. Tools, Cutting - Life expectancy 3. WAL R 401/109-3.

Flame stability limits of a baffle in a hot fast gas stream with kerosene fuel, by N. Golitzine. Canada. National Aeronautical Establishment. Dec 1953. 9p diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. Available for exchange from National Aeronautical Establishment, Montreal Road, Ottawa, Canada. PB 113603

Experiments showed that the flame stability limits of a baffle in a hot fast gas stream, similar to the gas stream in the jet pipe of a jet engine with exhaust reheat, depend to a very large extent on the location of the fuel jets upstream of the baffle. NAEC LR-88.

Flame stabilization in a fast air stream by the upstream air blast injection of kerosene fuel, by N. Golitzine. Canada. National Aeronautical Establishment. Dec 1953. 12p drawing, diagr, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. Available for exchange from National Aeronautical Establishment, Montreal Road, Ottawa, Canada. PB 113602

Experiments showed that flame stabilization in air streams of over 200 ft./sec. velocity is possible without plate baffles by the upstream air blast injection of kerosene fuel. NAEC LR-86.

Gas pulsator (Pulse jet). Fourth partial report, by D. W. Baker, G. C. Milak, and C. D. Porter. U. S. Naval Research Laboratory. Aug 1947. 162p photos, drawings, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $6.50, Photostat $21.50. PB 113632

1st-3d reports issued as NRL 0-2650, 0-2730, 0-2859.
1. Jet engines, Pulse-jet - Performance 2. Jet engines, Pulse-jet - Tests 3. Jet engines, Pulse-jet - Fuels - Tests 4. Jet engines, Pulse-jet - Combustion chambers - Design 5. Jet engines, Pulse-jet - Tail pipes - Design 6. Jet engines, Pulse-jet - Valves, Grid assembly - Design 7. NRL 0-3064.

New processes for machining and grinding, second report, by the Panel on New Processes for Machining and Grinding of the Minerals and Metals Advisory Board. National Research Council. Division of Engineering and Industrial Research. Minerals and Metals Advisory Board. Jul 1953. 52p diagrs, graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111243

Supplement to MAB-18-M (PB 106341).
1. Bort - Conservation 2. Diamond tools - Substitutes 3. Metals, Hard - Grinding 4. Grinding, Electrodischarge 5. Grinding, Ultrasonic 6. Grinding, Silicon carbide 7. Grinding, Electrolytic 8. MMAB-54-C.

New shop techniques and developments, by Ivar C. Akerblom. U. S. Air Force. Air Research and Development Command. Cambridge Research Center. Research Services Division, Cambridge, Mass. Nov 1953. 14p photos, drawings, diagr Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111338

1. Machine shop practice 2. Lenses, Plastic - Manufacture 3. Lenses, Fresnel - Pressing 4. Lathe tools - Holders, Vacuum 5. Transistors - Power supplies 6. AAF CRC TR 53-38.

Power hacksaw operations on titanium and its alloys, by L. V. Colwell and Frank Sowa. Michigan. University. Engineering Research Institute, Ann Arbor, Mich. Jan 1953. 33p photos, diagr, graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111300

Contract no. DA-20-018-ord-11918. Project M993, Report no. 6.
1. Titanium - Milling 2. Hacksaws - Tests 3. WAL R 401/109-6.

Preliminary experimental investigation of howling in reheat combustion chambers, by H. U. Wisniowski. Canada. National Aeronautical Establishment. Sep 1953. 32p photos, diagrs, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $5.25. Available for exchange from National Aeronautical Establishment, Montreal Road, Ottawa, Canada. PB 113601

The effect of many factors on howling was investigated. It was found that howling was caused by a standing, longitudinal wave. Unstable combustion was assumed as the origin of this oscillation. NAEC LR-84.

Productivité des U. S. A. dans l'industrie de la fonderie de fer. Rapport des visites effectuées aux U. S. A. en janvier-février 1951, por une équipe belge sous les auspices de l'Economic Cooperation Administration (Productivity in the American iron foundry industry. Report of visits to the U. S. A. in Jan-Feb 1951 by a Belgian group under the auspices of the Economic Cooperation Administration). "Fabrimetal," Federation des Entreprises de l'Industrié des Fabrications Metalliques, Bruxelles, Belgium. Apr 1952. 88p photos, drawings, graphs, map, tables Available from Mr. Georges Paques, Director of Public Relations, Associacion Française pour l'Accroissement de la Productivité, 11 Rue Faubourg St. Honoré, Paris, France. PB 113606

1. Iron foundries 2. Iron foundries - Machines.

Pulse-jet engine, eighth partial report: Whirling arm, by W. K. Barrett and C. D. Porter. U. S. Naval Research Laboratory. Oct 1950. 15p

photos, graphs, table Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113628

1. Jet engines, Pulse-jet - Mounts 2. Jet engines, Pulse-jet - Testing equipment 3. NRL R 3742.

Schraube mit vor-und betriebslast, ein einfaches allgemeingultiges schraubild (The bolt-stud under the action of initial and working loads, a simple stress diagram for all general purposes), by Siegfried Berg. Translated by F. Rizzo. Sep 1953. 13p photos, diagrs, graph Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113608

Translated from Z. VDI, v. 95, no. 11/12, 15 Apr 1953, p. 349-350.
1. Bolts - Stresses - Germany 2. NAVSHIPS T536.

Some overseas developments in surface finish, by C. A. Gladman. Australia. Commonwealth Scientific and Industrial Research Organization. Division of Meteorology. 1953. 33p photos, diagrs, graphs, table Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $5.25. PB 113478

Technical paper no. 3.
1. Friction - Theory - Australia 2. Tools, Cutting - Surface finish - Australia 3. Surface finishes - Australia 4. Machining - Effect on surface finish - Australia.

Tool life versus nose radius when turning titanium, by L. V. Colwell. Michigan. University. Engineering Research Institute, Ann Arbor, Mich. Jan 1953. 29p graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111301

Contract DA-20-018-ord-11918. Project M993, Report no. 7.
1. Titanium - Milling 2. Tools, Cutting - Nose radius 3. Tool, Cutting - Life expectancy 4. WAL R 401/109-7.

MEDICAL RESEARCH AND PRACTICE

Anthropometry of male basic trainees, by Gilbert S. Daniels, H. C. Meyers, Jr., and Edmund Churchill. U. S. Air Force. Air Research and Development Command. Wright Air Development Center. Aero-Medical Laboratory, Wright-Patterson Air Force Base, Dayton, O. and Antioch College, Yellow Springs, O. Jul 1953. 103p drawings, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $3.00. PB 111325

Body size data for 60 measurements of over 3,000 Air Force male basic trainees are presented for use by aircraft and equipment designers. The statistics reported for each measurement are: the mean, standard deviation, coefficient of variation, standard errors of these statistics, range, and selected percentiles from the first to the ninety-ninth. In general, the statistics are reported in both the metric and English values. A complete description of the anthropometric techniques used is presented. Contract no. AF 18(600)-30. AAF WADC TR 53-49.

Anthropometry of WAF basic trainees, by Gilbert S. Daniels, H. C. Meyers, Jr. and Sheryl H. Worrall. U. S. Air Force. Air Research and Development Command. Wright Air Development Center. Aero-Medical Laboratory, Wright-Patterson Air Force Base, Dayton, O. and Antioch College, Yellow Springs, O. Jul 1953. 107p photos, drawings, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. $3.00. PB 111326

Body size data for 63 measurements of 852 Women's Air Force basic trainees are presented for use by the designers of Air Force equipment. The statistics reported for each measurement include; the mean, standard deviation, coefficient of variation, standard errors of these statistics, range, and selected percentiles from the first to the ninety-ninth. In general, these statistics are reported in both the metric and English values. A complete description of the anthropometric techniques used is presented. Contract no. AF 18(600)-30. AAF WADC TR 53-12.

Efficiency of impaired ears in noise, C: Perception of speech at suprathreshold levels, by Charles Lightfoot, Raymond Carhart, and James F. Jerger. U. S. Air Force. School of Aviation Medicine, Randolph Field, Texas. Dec 1953. 13p graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113580

Standard speech discrimination tests were administered to normal and hard-of-hearing subjects at three suprathreshold levels, in quiet and in two levels of thermal noise. The general conclusion was that noise was not observed to exert a systematically detrimental effect on discrimination of monosyllabic words by hard-of-hearing subjects. There was, however, substantial variation among individuals. Contract no. AF 33(038)-22645. AAF SAM Proj 21-1203-0001, Report no. 6.

Etiologic agents of urinary tract infections and their in vitro reactions to selected chemotherapeutic agents, by David E. Singer, Laurie V. Pierce, Albert V. Hardy, and Roland B. Mitchell. U. S. Air Force. School of Aviation Medicine, Randolph Field, Texas. Dec 1953. 5p tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 112991

A total of 1,216 isolations of microorganisms were obtained from 848 urine specimens submitted for bacteriologic analyses. Of the microorganisms isolated, 1,032 were gram-negative bacilli, 172

were gram-positive cocci, and 12 were yeastlike organisms. Studies of in vitro sensitivity reactions of microorganisms isolated from urine specimens against a battery of several therapeutic test agents emphasized the importance of such tests. Contract no. AF 33(038)-12465. AAF SAM Proj no. 21-1401-0005, Report no. 5.

Laboratory diagnosis of urinary tract infections, by Betty S. McNeil, David E. Singer, Harold V. Ellingson, and Roland B. Mitchell. U. S. Air Force. School of Aviation Medicine, Randolph Field, Texas. Dec 1953. 9p diagrs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 112946

A schema is presented for the bacteriologic analysis of urinary tract infections, including the identification and antibiotic sensitivity reactions of the microorganisms isolated. The procedures are reviewed for the physician and outlined for the technician, as an aid in providing more efficient and rapid treatment of these infections. AAF SAM Proj no. 21-1401-0005, Report no. 4.

Maximum humidity in engineering design, by N. Sissenwine. U. S. Air Force. Air Research and Development Command. Cambridge Research Center, Geophysics Research Directorate, Cambridge, Mass. Oct 1953. 18p diagr Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113299

The impact of high humidity on equipment is analyzed and classified into operational problems and standby storage (deterioration) problems. The various methods of designating humidity are explained. Data are described substantiating limitations. AAF GRD SG 49. AAF CRC 53-51.

Microbial polysaccharides as plasma substitutes. Wisconsin. University. Dept. of Bacteriology and Wisconsin. University. Dept. of Biochemistry. Final report under ONR Contract no. N7onr-28508, Task order no. 8 (16D-609) for period June 30, 1952 to June 1, 1953. Jun 1953. 39p graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $5.25. PB 113547

The report is divided into two sections (1) Bacteriology (2) Biochemistry. Section 1 includes: Introduction and summary of previous work, methods, tests of cultures isolated on salts and semi-synthetic media, reproducibility of results, identification of cultures, effect of nitrogen level on polysaccharide production, polysaccharide synthesis by growing culture and resting cells of strain A5. Section 2 includes the experimental data. A summary and bibliographic references, graphs and tables are given for each section.

Relationship between excess respiratory metabolism and utilization of intravenously infused sodium racemic lactate and sodium L(-) lactate, by Norman R. Alpert and Walter S. Root. U. S. Air Force. School of Aviation Medicine, Randolph Field, Texas. Dec 1953. 11p graphs, table Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113581

The lactate utilization of 19 unanesthetized dogs was calculated from the plasma lactate disappearance after appropriate allowances were made for diffusion and excretion. Forty percent of the naturally occurring isomer of lactic acid (L [illegible]) available was utilized in about 10 minutes, whereas the same fraction of the racemic (r) lactate available was utilized in 23 minutes. According to calculations based on these observations, 1½ hours would be required for 40 percent utilization of D (+) lactate. Contract no. AF 33(038)-25899. AAF SAM Proj no. 21-2301-0005, Report no. 15.

Transient viability of the spotted fever rickettsia in Triatoma gerstaeckeri, an epidemiologic study, by Ludwik Anigstein and Ardzroony Packchanian. U. S. Air Force. School of Aviation Medicine, Randolph Field, Texas. Oct 1953. 6p Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113326

Dermacentroxenus rickettsii remained infective in Triatoma gerstaeckeri at least 9 hours. It appears doubtful that T. gerstaeckeri plays a significant role in the transmission of this type of spotted fever. Contract no. AF 41(607)-43. AAF SAM Proj. no. 21-1401-0008, Report no. 1.

METALS AND METAL PRODUCTS

Brazy olowiowe i metody wylewania nimi panewek stalowych (Lead bronzes and methods of their casting on steel bearing shells), by M. Schneider and S. Balicki. Translated by Halina Heitzman, edited by F. A. Raven. Dec 1953. 130p photos, drawings, diagrs, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $4.75, Photostat $14.00. PB 113611

Translated from Prace Glowago Inst. Met. vol. 3, 1951, p. 115-148.
1. Lead-bronze alloys - Casting - Russia 2. Casting - Methods - Russia 3. Bearings, Copper-lead - Russia 4. Bearings, Friction - Linings - Russia 5. Copper - Diffusion - Russia 6. NAVSHIPS T547 7. STS 174.

Development of composite spectrophotometric procedures for the analysis of low-alloy steels and of aluminum and its alloys, by Gilbert H. Ayres and Stanley H. Simonsen. Texas. University, Austin, Texas. Nov 1952. 68p table Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.50. PB 111287

Detailed procedures, with explanatory notes, to serve as a practical laboratory manual are given for the spectrophotometric analysis of low-alloy steels for chromium, copper, manganese, molybdenum, nickel, phosphorus, silicon, and vanadium, and for the analysis of aluminum and its alloys for chromium, copper, iron, manganese, molybdenum, nickel, titanium, and vanadium. Contract no. AF 33(038)-23168. AAF WADC TR 52-246.

Effect of heat treatment upon the microstructure and hardness of a wrought cobalt-base alloy Stellite 21 (AMS 5385), by F. J. Clauss and J. W. Weeton. U. S. National Advisory Committee for Aeronautics. Mar 1954. 26p photos, graphs Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113535

An investigation has been made to study the response of wrought Stellite 21 to heat treatment. A period of 72 hours at 2250° F was sufficient for effective solution treatment of this alloy. A maximum hardness of Rockwell C-42 was developed by aging 72 hours in the temperature range from 1400° to 1500° F, as compared to Rockwell C-20 to C-22 for the solution-treated condition. Overaging or softening occurred within 72 hours at temperatures of 1750°F and above for aging, and 1950° F for isothermal transformation. NACA TN 3107.

Fliegwerkstoffe handbuch für die auswahl der im deutschen flugzeug-, flugmotoren-, und luftfahrtgerätebau zu verwendenden werkstoffe. I. Teil: Metallische werkstoffe (Aircraft construction materials, handbook for selection of suitable materials for equipment for German aircraft, aircraft engines, and the aircraft industry. Part I: Metals). Germany. Reichsluftfahrtministerium. Werkstoffabteilung. Oct 1942. 215f tables (Text in German) Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $8.00, Enlargement Print $29.00. PB 113397

1. Airplanes - Materials - Metals 2. Airplanes - Materials - Aluminum alloys 3. Airplanes - Materials - Light metals 4. Airplanes - Materials - Steel.

Fundamental investigation of the flash welding of aluminum alloys. Rensselaer Polytechnic Institute. Dept. of Metallurgical Engineering, Troy, N. Y. Final report under Contract no. W-33-038-ac-17624, by W. F. Hess, R. M. Curran, P. Patriarca. Mar 1948. 114p photos, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $4.75, Photostat $15.00. PB 109819

1. Aluminum alloys - Welding, Flash 2. Welding, Flash - Temperature distribution.

Further studies of the mechanism by which hydrogen enters metals during chemical and electrochemical processing, by L. D. McGraw, W. E. Ditmars, C. A. Snavely and C. L. Faust. U. S. National Advisory Committee for Aeronautics. Mar 1954. 38p diagr, graphs, tables Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113537

In the present work the phenomena relating to hydrogen entry into steel were studied. In general, the results support the newly postulated concepts. Contents: Appendix A: Evidence taken from recently published literature which supports the proposed hydrogen-entry mechanism. - Appendix B: Experiments on effect of hydrogen content on bend angle for steel specimens. For earlier report on this subject see NACA TN 2696 (PB 106804). NACA TN 3164.

Investigation of lamellar structures and minor phases in eleven cobalt-base alloys before and after heat treatment, by J. W. Weeton and R. A. Signorelli. U. S. National Advisory Committee for Aeronautics. Mar 1954. 50p photos, diagrs, graphs, tables Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113579

An investigation of the occurrence and nature of lamellar structures and minor phases of eleven cobalt-base high-temperature alloys (rolled, cast, and high-carbon Stellite 21, 422-19, X-63, 6059, 61, X-40, S-816, I-336, and J). The minor phases TaC, NbC, Cr_3C_2, Cr_7C_3, $Cr_{23}C_6$, M_6C, Cr_2O_3 type oxides, spinels, and sigma were identified by X-ray diffraction analysis. NACA TN 3109.

Mechanical properties of machinability program work materials, by L. V. Colwell and W. C. Truckenmiller. Michigan. University. Engineering Research Institute, Ann Arbor, Mich. Dec 1952. 29p graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111296

Contract no. DA-20-018-ord-11918. Project M993, Report no. 2.
1. Steel - Hardness tests 2. Steel - Tensile tests 3. Steel, Stainless - Hardness tests 4. Steel, Stainless - Tensile tests 5. Titanium alloys - Tensile tests 6. Titanium alloys - Hardness tests 7. WAL R 401/109-2.

Phase diagrams of the titanium-aluminum, titanium-chromium-iron and titanium-oxygen alloy systems, by R. J. Van Thyne, E. S. Bumps, H. D. Kessler, M. Hansen. Armour Research Foundation, Chicago, Ill. Dec 1952. 94p photos, diagrs, graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. $2.00. PB 111327

Partial phase diagrams are presented for the systems titanium-aluminum, titanium-chromium, titanium-iron, titanium-chromium-iron, and titanium-oxygen. All studies are completed except for the titanium-chromium-iron system, which requires further confirmatory work in certain areas. The results are outlined in Section IV of this report. Contract no. AF 33(038)-8708. AAF WADC TR 52-16.

Preliminary report on the "Cutting characteristics of titanium" (A technical paper presented before the ASME, Dec 3, 1952), by L. V. Colwell and W. C. Truckenmiller. Michigan. University. Engineering Research Institute, Ann Arbor, Mich. Dec 1952. 30p photos, graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111295

Contract no. DA-20-018-ord-11918. Project M993, Report no. 1.
1. Titanium - Machinability 2. Titanium alloys - Machinability 3. WAL R 401/109-1.

Progress report. New Jersey Ceramic Research Station, Rutgers University, New Brunswick, N. J. Under Contract no. W-36-039-sc-38188. Order separate parts described below from Library of Congress, Publication Board Project, Washington 25, D. C., giving PB number of each part ordered.

No. II, from Jun 1 to Sep 1, 1949, by N. H. Snyder, E. J. Smoke, H. R. Wisely, E. Ruh. Sep 1949. 64p photos, diagr, tables Microfilm $3.25, Photostat $9.00. PB 113566

The results of eight tests are reported. The data collected indicates that some phase of the procedure is not being controlled as a given composition which repeatedly gives excellent results, can also give poor results. Tests were made on specimens soaked for long periods in both salt water and distilled water. Part III is omitted. Contents: Part I. Development of ceramic bodies with high thermal conductivity. - Part II. High thermal shock ceramics. - Part IV. Development of ceramic materials free of electrolytes. - Part V. Development of dense cordierite bodies.

No. IV, from Dec 1, 1949 to Mar 1, 1950, by N. H. Snyder, E. J. Smoke, H. R. Wisely, E. Ruh. Mar 1950. 75p diagrs, graphs, tables Microfilm $3.75, Photostat $10.25. PB 113567

An experiment has been conducted in an attempt to correlate the use of different diameter bars and specimens in the present apparatus. Variations not greater than two per cent were found when the sample diameter equalled the copper bar diameter, but if the specimen diameter varied to any great extent from the bar diameter, a considerably larger error resulted. The thermal conductivity of a single crystal magnesium-aluminate spinel and two multicrystalline spinel type bodies have been evaluated. Part III is omitted. Contents: Part I. Development of ceramic bodies with high thermal conductivity. - Part II. High thermal shock ceramics. - Part IV. Development of ceramic materials free of electrolytes. - Part V. Development of dense cordierite bodies.

No. V, from Mar 1 to Jun 1, 1950, under Contract no. W-36-039-sc-38188, by N. H. Snyder, E. J. Smoke, H. R. Wisely, E. Ruh. Jun 1950. 81p drawing, diagr, graphs, tables Microfilm $4.00, Photostat $11.50. PB 113568

An investigation has been conducted regarding the thermal conductivity of the various titanates which are commercially available. Bodies listed in order of decreasing conductivity that have been tested to date are: strontium titanate, titanium dioxide, calcium titanate, barium titanate, and barium titanate plus 4% lead titanate. Also contained in this report is a brief preliminary description of the high vacuum apparatus which has just been completed for thermal conductivity measurement. Part III is omitted. Contents: Part I. Development of ceramic bodies with high thermal conductivity. - Part II. High thermal shock ceramics. - Part IV. Development of ceramic materials free of electrolytes. - Part V. Development of dense cordierite bodies.

Properties of ML aluminum alloy, by J. C. McGee. U. S. Air Materiel Command. Engineering Division. Materials Laboratory, Wright-Patterson Air Force Base, Dayton, Ohio. Dec 1948. 50p photos, graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111329

The effect of variations in chemical composition of ML aluminum alloy from the nominal 4 percent copper, 2 percent nickel, 2 percent magnesium, 0.3 percent manganese, 0.3 percent chromium, 0.1 percent titanium, and 0.1 percent vanadium were studied by changing the proportion of one element at a time and evaluating the 600°F tensile strength, microstructure, and other properties. Compositional limits derived from this work are given herein. For creep tests made by Battelle Memorial Institute on this alloy see PB 107257. AAF TR 5750. AAF TSEAM M5306, Add. 1.

Purkinje effect in luminance measurements of Air Force phosphors, by Daniel I. Pomerantz and John R. Cannon. U. S. Air Force. Air Research and Development Command. Wright Air Development Center. Materials Laboratory, Wright-Patterson Air Force Base, Dayton, Ohio. Oct 1952. 30p photo, graphs Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111282

A formula is derived for relating effective and photopic units of luminance, making use of Weaver's interpolated data for the mesop luminosity functions. This formula is applied to the spectra of four typical Air Force luminescent phosphors and the calculated results are compared with experimental data obtained at Wright Air Development Center. It is concluded that Weaver's data may tentatively be accepted for conversion between effective and photopic units in luminance measurements of luminescent materials. AAF WADC TR 52-282.

Relation of microstructure to high-temperature properties of a wrought cobalt-base alloy, Stellite 21 (AMS5385), by F. J. Clauss and J. W. Weeton. U. S. National Advisory Committee for Aeronautics. Mar 1954. 49p photos, graphs, tables Available

from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C.
PB 113578

Wrought Stellite 21, was found to respond readily to solution treatment and to isothermal and aging heat treatments to form pearlitic and Widmanstätten structures as well as scattered precipitates. The results obtained in this investigation, lead to conclusions that are believed to have general significance in the heat treatment of other high-temperature alloys. NACA TN 3108.

Research investigations of magnetic material, permanent ceramic type. Philips Laboratories, Inc., Irvington-on-Hudson, N. Y. Under Contract DA-36-039-sc-42503. Dept. of the Army project no. 3-93-00-503. Signal Corps project no. 32-2005D. Case no. 1277. Order separate parts described below from Library of Congress, Publication Board Project, Washington 25, D. C., giving PB number of each part ordered.

First quarterly progress report, Jul 1, 1952 to Sep 30, 1952, by Frank G. Brockman. Sep 1952. 21p photos, graphs Microfilm $2.25, Photostat $4.00. PB 113551

A study has been begun and partially completed in order to establish the processing conditions under which the barium oxide-iron oxide material would possess the 0.8×10^6 gauss-oersted, or larger, maximum energy product reported.

Second quarterly progress report, Oct 1, 1952 to Dec 31, 1952, by Frank G. Brockman. Dec 1952. 26p photos, graphs (part fold), tables Microfilm $2.25, Photostat $4.00. PB 113552

The distributions of particle sizes in the pre-fired raw materials for the barium series of compositions were measured. A preliminary investigation of the strontium and lead homologues of the barium material was made. Equipment was designed and built for the study of the magnetic properties of permanent magnet samples at temperatures different from room temperature.

Third quarterly progress report, Jan 1, 1953 to Mar 31, 1953, by Frank G. Brockman. Mar 1953. 25p photos, graphs, tables Microfilm $2.25, Photostat $4.00. PB 113553

A study of processing variables has led to experimental results which are much more reproducible than the results reported previously. In addition the improved techniques have permitted a demonstration of the optimum conditions for the preparation of the permanent magnet material. A special magnet was constructed which will be used in studies of oriented materials.

Fourth quarterly progress report, Apr 1, 1953 to Jun 30, 1953, by Frank G. Brockman, Paul W. Beck, Reina A. Hutner. Jun 1953. 95p photos, diagrs, graphs, tables Microfilm $4.50, Photostat $12.75. PB 113554

The investigation of the barium compound was finished in this period with (1) the completion of the accumulation of data relative to firing (2) the determination of the magnetic properties from -67°C to +95°C (3) the determination of the normal magnetization curves. Supplement: Analysis of an article on ferroxdure, by R. A. Hutner. Article is Ferromagnetic properties of hexagonal iron-oxide compounds with and without a preferred orientation, by Rathenau, Smit and Stuyts (Zeits. f. Physik 133, p. 250-260 (1952)).

Research services and investigations on subminiature multielement diodes and bistable elements for microtronic circuits. Battelle Memorial Institute, Columbus, Ohio. 8th interim engineering report, period Jun 20, 1953 to Sep 30, 1953, under Contract no. AF 19(604)-55, by E. B. Dale, W. E. Bulman, M. Genser, and C. S. Peet. Sep 1953. 24p photos, graphs, table Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113558

1. Junctions, Electrical 2. Contacts, Electric - Materials 3. Silicon - Purification 4. Computers, Digital - Components 5. Vacuum tubes, Diode - Miniaturization 6. Crystals, Germanium - Electrical properties.

Transformation of austenite under externally applied tensile stress. Columbia University. Seventh quarterly progress report for the period Sep 1, 1953 to Nov 30, 1953, under Contract no. Nonr-266(18), by George L. Rehl and Subrata Bhattacharyya. Mar 1954. 22p photos, diagr Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113584

1. Austenite - Stresses 2. Austenite - Transformation 3. Photomicrography.

METEOROLOGY AND CLIMATOLOGY

Annotated bibliography on snow, ice, and permafrost; vol. I, prepared by Donald G. Yerg. U. S. Library of Congress. Technical Information Division. Sep 1951. 229p Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $8.25, Photostat $29.00. PB 113539

For vols. 2-4 see PB 113540, 112250, 112252. Prepared by Science Division, Library of Congress under contract with the Snow, Ice and Permafrost Research Establishment, Corps of Engineers, U. S. Army. Bibliographic material furnished in part by University of Minnesota and Purdue University. 1. Snow - Bibliography 2. Ice - Bibliography 3. Permafrost - Bibliography 4. Minnesota. University 5. Purdue University, Lafayette, Ind. 6. U. S. Army. Corps of Engineers. Snow, Ice and Permafrost Research Establishment, Wilmette, Ill. 7. SIPRE 12, vol. 1.

Annotated bibliography on snow, ice and permafrost, vol. II, prepared by Donald G. Yerg. U. S. Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $9.25, Photostat $45.25. PB 113540

1. Snow - Bibliography 2. Ice - Bibliography 3. Permafrost - Bibliography 4. U. S. Army. Corps of Engineers. Snow, Ice and Permafrost Research Establishment, Wilmette, Ill. 5. SIPRE 12, vol. 2.

Atmosphere radiation research project. Utah. University. Meteorology Dept., Salt Lake City, Utah. Under Contract no. AF 19(122)-256. Order separate parts described below from Library of Congress, Publication Board Project, Washington 25, D. C., giving PB number of each part ordered.

Quarterly progress report no. 1, for the period Jun 15, 1950 to Sep 15, 1950. Sep 1950. 16p tables Microfilm $2.00, Photostat $2.75. PB 113515

Appendix A: Instructions for operating Underwood Sundstrand Account Machine Model D.
1. Atmosphere - Moisture content 2. Solar radiation - Research 3. Computers, Digital - Operation.

Quarterly progress report no. 2, for the period Sep 15, 1950 to Dec 15, 1950. Dec 1950. 44p tables Microfilm $2.75, Photostat $6.50. PB 113516

Appendix A: Water vapor path length and radiative cooling factor tables to facilitate the solution of atmospheric radiation problems, by Don R. Dickson.
1. Water vapor - Measurements 2. Water vapor - Cooling - Tables 3. Tables, Mathematical.

Quarterly progress report no. 3, for the period Dec 15, 1950 to Mar 15, 1951. Mar 1951. 15p tables Microfilm $2.00, Photostat $2.75. PB 113518

Appendix A: Distribution of water vapor radiational cooling in certain typical air masses, by Thomas E. Hoffer.
1. Solar radiation - Research 2. Stratosphere - Water vapor content 3. Stratosphere - Cooling - Tables.

Quarterly progress report no. 5, for the period Jun 15, 1951 to Sep 15, 1951. Sep 1951. 136p maps, graphs, tables Microfilm $5.75, Photostat $17.75. PB 113519

Appendix A: Study of the long wave radiation balance in certain typical air masses, by Thomas E. Hoffer. - Appendix B: Distribution of water vapor radiative-cooling in an outbreak of Polar air, by John E. Alder.
1. Stratosphere - Humidity 2. Atmosphere, Upper - Cooling - Effect of clouds 3. Water vapor - Cooling - Tables.

Bibliography on microseisms. California Institute of Technology. Seismological Laboratory, Pasadena, Calif. Oct 1949. 64p Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $3.25, Photostat $9.00. PB 113429

Contract W28-099-ac-426. California Institute of Technology. Division of the Geological Sciences. Contribution no. 523.
1. Microseisms - Bibliography.

Determination of the electron density distribution of an ionosphere layer in the presence of an external magnetic field, by John M. Kelso. Pennsylvania State University. Ionosphere Research Laboratory, State College, Pa. Dec 1953. 72p graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $3.75, Photostat $10.25. PB 113466

An accurate method is given for the determination of the electron density distribution of an ionosphere layer in the presence of an external magnetic field. The shape of the layer is determined in the process of calculation, and is not assumed in advance. Contract no. AF 19(122)-44. Appendix A. Calculation of group refractive index. - Appendix B. Preparation of the integration formulae. - Appendix C. Determination of electron density distribution for example 3. PSC IRL SR 55.

Index of coronal line emission integrated over the solar disk, by Catherine B. Wyatt. Harvard University. High Altitude Observatory, Boulder, Colo. Mar 1951. 33p col. diagr, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $5.25. PB 113376

Special report no. 36 under Contract W19-122ac-17 for the establishment of a solar observatory at Sacramento Peak, New Mexico. Color in figure 1 will not reproduce.
1. Corona discharges - Measurement.

Infrared studies of atmospheric constituents. Ohio State University Research Foundation, Columbus, Ohio. Under Contract no. AF 19(122)-65. Proj. 381. Order separate parts described below from Library of Congress, Publication Board Project, Washington 25, D. C., giving PB number of each part ordered.

Progress report no. 3 for the period Nov 16, 1949 to Feb 15, 1950, by Dudley Williams. Feb 1950. 13p graphs Microfilm $2.00, Photostat $2.75. PB 113647

Report no. 3.
1. Solar radiation - Spectrography 2. Spectroscopy, Infrared 3. Atmosphere - Spectrographic analysis 4. Photoelectric cells, Infrared.

Progress report no. 4 for the period Feb 16, 1950 through May 15, 1950, by Dudley Williams. May 1950. 11p table Microfilm $2.00, Photostat $2.75. PB 113648

Report no. 4.
1. Solar radiation - Spectrography 2. Spectroscopy, Infrared 3. Atmosphere - Spectrographic analysis 4. Nitrogen oxides - Atmospheric distribution 5. Photoelectric cells, Infrared.

Progress report no. 5 for the period May 16, 1950 through Aug 15, 1950, by Dudley Williams. Dec 1950. 12p table Microfilm $2.00, Photostat $2.75. PB 113649

Report no. 5.
1. Atmosphere - Spectrographic analysis
2. Spectroscopy, Infrared 3. Photoelectric cells, Infrared 4. Nitrogen oxides - Atmospheric distribution 5. Solar radiation - Spectrography.

Progress report no. 6 for the period Aug 16, 1950 through Nov 15, 1950, by Dudley Williams. Dec 1950. 7p Microfilm $1.50, Photostat $1.50. PB 113650

Report no. 6.
1. Atmosphere - Spectrographic analysis
2. Spectroscopy, Infrared 3. Nitrogen oxides - Atmospheric distribution.

Progress report no. 7 for the period Nov 16, 1950 through Feb 15, 1951, by H. H. Nielsen. Feb 1951. 9p Microfilm $1.50, Photostat $1.50. PB 113651

Report no. 7.
1. Atmosphere - Spectrographic analysis
2. Spectroscopy, Infrared 3. Photoelectric cells, Infrared 4. Nitrogen oxides - Atmospherid distribution 5. Water vapor - Spectrographic analysis.

Progress report no. 8 for the period Feb 15, 1951 through May 15, 1951, by H. H. Nielsen. May 1951. 9p Microfilm $1.50, Photostat $1.50. PB 113652

Report no. 8.
1. Atmosphere - Spectrographic analysis
2. Spectroscopy, Infrared 3. Nitrogen oxides - Atmospheric distribution 4. Ozone - Spectrographic analysis 5. Water vapor - Spectrographic analysis.

Progress report no. 9 for the period May 16, 1951 through Aug 15, 1951, by H. H. Nielsen. Aug 1951. 10p Microfilm $1.50, Photostat $1.50. PB 113653

Report no. 9.
1. Atmosphere - Spectrographic analysis
2. Spectrography, Infrared 3. Ozone - Spectrographic analysis.

Introduction to the study of the physical constitution and chemical composition of the high atmosphere, by M. Nicolet and P. Mange. Pennsylvania State College. Ionosphere Research Laboratory, State College, Pa. Apr 1952. 120p graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $4.75, Photostat $15.00. PB 113225

Contract no. AF 19(122)-44, Scientific report no. 35.
1. Atmosphere, Upper - Diffusion 2. Atmosphere, Upper - Models 3. Atmosphere, Upper - Oxygen content 4. Atmosphere, Upper - Temperature - Measurement 5. PSC IRL SR 35.

Investigation of the ionizing effect in the E-layer near sunrise, by Rune Lindquist. Pennsylvania State College. Ionosphere Research Laboratory, State College, Pa. Mar 1952. 62p diagrs, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $3.00, Photostat $8.75. PB 113224

Contract no. AF 19(122)-44, Scientific report no. 34.
1. Ionosphere - Research 2. Ionosphere - E-layer 3. Atmosphere, Upper - Ionization - Measurement 4. Solar radiation - Absorption - Measurement 5. PSC IRL SR 34.

Ionospheric research. Pennsylvania State College. Ionosphere Research Laboratory, State College, Pa. Progress report no. 15 under Contract no. AF 19(122)-44 for period 24 Aug 1952 to 24 Nov 1952, by A. H. Waynick. Nov 1952. 84p graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $3.75, Photostat $11.25. PB 113216

Includes Method of solving the wave equation in a region of rapidly varying complex refractive index, by J. J. Gibbons and R. L. Schrag (Reprinted from Journal of applied physics, vol. 23, no. 10, p. 1139-1142, Oct 1952). Procedure for the determination of the vertical distribution of the electron density in the ionosphere, by John M. Kelso (Reprinted from Journal of Geophysical research, vol. 57, no. 3, p. 357-367, Sep 1952). - Wave solutions, including doupling of ionospherically reflected long radio waves for a particular E-region model, by J. J. Gibbons and R. J. Nertney (Reprinted from Journal of Geophysical Research, vol. 57, no. 3, p. 323-338.
1. Ionosphere - Research 2. Radio waves - Propagation - Theory 3. Radio waves - Absorption - Theory 4. Radio waves - Polarization - Theory 5. Mathematical equations and solutions.

Meteoric echo study of upper atmosphere winds, by L. A. Manning, O. G. Villard, Jr., A. M. Peterson. Stanford University. Electronics Research Laboratory, Stanford, Calif. Jan 1950. 36p diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $5.25. PB 113504

Contract N6-onr-251, Consolidated task no. 7 (NR-078-360).
1. Winds, Ionospheric - Measurements 2. Winds, Ionospheric - Velocity 3. Meteors - Radio detection 4. SU ERL TR 22.

On meteor speed measurements by the radio doppler method at low frequencies, by D. C. Cherry and C.S. Shyman. Stanford University. Electronics Research Laboratory, Stanford, Calif. Feb 1949. 11p

Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113498

Contract N6-onr-251, Consolidated task no. 7 (NR-078-360).
1. Meteors - Radio detection 2. Meteors - Velocity - Measurement 3. Doppler effect 4. SU ERL 12.

Physical properties of the upper atmosphere. Utah. University. Dept. of Physics, Salt Lake City, Utah. Under Contract no. W19-122ac-15. Order separate parts described below from Library of Congress, Publication Board Project, Washington 25, D. C., giving PB number of each part ordered.

Progress report no. 1, by Leon B. Linford. Jun 1948. 11p diagrs Microfilm $2.00, Photostat $2.75. PB 113517

1. Atmosphere, Upper - Physical properties 2. Ionospheric measurements 3. Beacons, Ionospheric.

Progress report no. 17 for May 31, 1952 and final report, by Leon B. Linford. Jul 1952. 53p diagrs, table Microfilm $3.00, Photostat $7.75. PB 113513

1. Atmosphere, Upper - Physical properties 2. Rockets, Upper air - Equipment.

Preliminary results of flare observations from 15 Feb 1950 to 15 Nov 1950, by John W. Evans, Ch'ing-Sung Yü, Bruno Witte. Harvard University. High Altitude Observatory, Boulder, Colo. Jan 1951. 40p diagrs (1 fold), graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $5.25. PB 113374

Special report no. 34 under AMC Contract no. W19-122ac-17.
1. Solar flares - Photographic analysis 2. Detectors, Solar flare.

Punch card code for basic coronal observational material from Climax and Sacramento Peak, by Walter Orr Roberts. Harvard University. High Altitude Observatory, Boulder, Colo. Dec 1949. 14p diagrs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.75, Photostat $2.50. PB 113196

Contract W19-122-ac-17, Special report.
1. Solar observatories - Equipment 2. Solar radiation - Measuring equipment 3. Coronagraphs - Design 4. Corona - Mathematical analysis 5. Codes, Meteorological 6. Punched card system.

Radio doppler investigation of meteoric heights and velocities, by Laurence A. Manning, Oswald G. Villard, Jr., and Allen M. Peterson. Stanford University. Electronics Research Laboratory, Stanford, Calif. Sep 1948. 26p graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113493

Contract N6-onr-251, Consolidated task no. 7 (NR-071-361).
1. Meteors - Radio detection 2. Meteors - Velocity - Measurement 3. Doppler effect 4. Radio doppler investigation of meteoric heights and velocities 5. SU ERL TR 7.

Radioactive heating and cooling of the ozone layer, by Richard A. Craig. Harvard University. High Altitude Observatory, Boulder, Colo. Aug 1949. 46p diagr, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $6.25. PB 113195

Contract W19-122-ac-17, Special report.
1. Solar radiation - Absorption - Measurement 2. Atmosphere, Upper - Ozone - Heating - Theory 3. Atmosphere, Upper - Ozone - Cooling - Theory 4. Atmosphere, Upper - Ozone - Temperature distribution.

Report of progress no. 13, 1 May 1951 to 1 Aug 1951, under Contract W19-122-ac-17 for the establishment of a solar observatory at Sacramento Peak, New Mexico, by Herbert E. Chase. Harvard University. Harvard College Observatory, Cambridge, Mass. Sep 1951. 27p Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113371

1. Solar observatories - Equipment 2. Coronagraphs - Design.

Studies of lee waves in atmospheric models with continuously distributed static stability, by M. G. Wurtele. California. University. Dept. of Meteorology, Los Angeles, Calif. Jun 1953. 17p graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113614

Scientific report no. 4. Contract no. AF 19(122)-263.
1. Atmosphere, Upper - Models 2. Atmosphere, Upper - Turbulence - Theory 3. Bessel functions 4. Couette flow 5. Winds, Tropospheric - Theory.

Study of the earth's electrical field. Cornell Aeronautical Laboratory, Inc., Buffalo, N. Y. Tenth quarterly report for period Aug 1, 1953 to Oct 31, 1953, under Contract no. AF 19(122)-467, by David H. Garber. Jan 1954. 9p Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113586

1. Terrestrial magnetism - Measurement 2. Earth - Electrical properties 3. Instruments, Measuring - Magnetic 4. CAL RA-764-P-10.

Thunderstorm electricity research. Chicago. University. Dept. of Meteorology. Final report under

Contract no. AF 19(122)-194, by Horace R. Byers. Nov 1953. 5p Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113556

1. Thunderstorms - Electrical properties 2. Atmosphere - Electricity.

MINERALS AND MINERAL PRODUCTS

Technical report no. 1 under Contract no. Nonr-404 (02), by William H. Bauer, Irwin Gordon, Ernest R. Glabau. New Jersey Ceramic Research Station, Rutgers University, New Brunswick, N. J. Jul 1953. 45p diagr, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.75, Photostat $6.50. PB 113528

1. Earths, Rare - Properties 2. Earths, Rare - Electric conductivity 3. Earths, Rare - Ion exchange 4. Earths, Rare - Spectrographic analysis 5. Cerium compounds - Properties 6. Lanthanum compounds - Properties 7. Neodymium compounds - Properties.

ORDNANCE AND ACCESSORIES

Tables of the cumulative binomial probabilities, by Leslie E. Simon and Frank E. Grubbs. U. S. Aberdeen Proving Ground. Ballistic Research Laboratories, Aberdeen, Md. Sep 1952. 605p graph, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. $6.00. PB 111389

Extensions of tables of the incomplete beta-functions, by Karl Pearson.
1. Probability - Tables 2. Tables, Mathematical 3. Coefficients, Binomial 4. ORD P 20-1.

PACKING AND PACKAGING

Humidity indicating card for packaging. U. S. Chemical Corps. Chemical and Radiological Laboratories, Army Chemical Center, Md. Interim report under Project 4-91-06-002, started 11 June 1952, completed 10 October 1952. Dec 1953. 25p diagrs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113548

Report on a cobalt chloride base humidity indicating paper. It was found satisfactory for numerous packaging needs. CRLR 257. CC CRL IR 257.

PERSONNEL APTITUDE TESTING

Development of qualifications standards for the utilization of civilian skills in the Naval Reserve, by Martin J. Byrne, Calvert L. Willey, Joyce M. Weigle and Ruth K. Luff. Clifton Corporation, Washington, D. C. Jun 1953. 31p Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $5.25. PB 113629

Contract Nonr-883 (00).
1. Personnel, Naval - Classification 2. Personnel, Naval - Ability tests 3. Job classification.

Factorial composition of the relative movement test, by Charles M. Lucas and John W. French. Educational Testing Service, Princeton, N. J. Jul 1953. 31p photos, diagrs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $5.25. PB 113530

Contract Nonr 694 (00). Project designation NR 151-13. U. S. Navy Personnel Research Report.
1. Personnel, Naval - Classification 2. Personnel, Naval - Selection and training 3. Motion and time study 4. Psychological tests 5. Tests, Officer qualification.

"Response guidance" as a factor in the value of audience participation in training film instruction, by G. A. Kimble and J. J. Wulff. Yale University, New Haven, Conn. Mar 1953. 20p diagrs, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.75, Photostat $2.50. PB 113182

Contract no. AF 33(038)-13678. Main part of this report is identical with HRRL Report no. 34, which is intended for the general non-technical reader and which does not include the technical appendix contained herein.
1. Learning - Theory 2. Motion pictures, Educational - Audience participation 3. Training, Visual - Evaluation 4. Training films, Audio-visual - Evaluation 5. U. S. Air Force. Air Research and Development Command. Human Factors Operations Research Laboratories, Bolling Air Force Base, Washington, D. C. 6. AAF HFORL MR 36.

Study of the degrees of illiteracy-literacy required in various naval battle stations, by Harold A. Edgerton. Richardson, Bellows, Henry & Co., Inc., New York, N. Y. Jul 1953. 74p diagrs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $3.75, Photostat $10.25. PB 113532

Contract Nonr-416(00).
1. Personnel, Naval - Literacy rating scales 2. Personnel, Naval - Selection and training 3. U. S. Bureau of Naval Personnel. Personnel Analysis Division. Billet and Qualifications Research Branch.

PHOTOGRAPHIC AND OPTICAL GOODS

Image-motion compensation in aerial cameras by means of rotating thin prisms, by F. S. Johnson and E. J. Shafer. U. S. Naval Research Laboratory. Mar 1954. 18p photos, diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113685

Counter-rotating thin prisms were mounted before a 6-in. lens on a K-17 aerial camera to demonstrate the feasibility of compensating in this manner for image motion due to the motion of the aircraft. The theory necessary for determining the prism power and rate of prism rotation is presented. A set of photographs were obtained and are included in the report to permit the reader to evaluate for himself the success of this method of image-motion compensation. The method appears to be especially well suited for use on cameras with narrow fields of view, but is of some value even with wide field of view cameras. NRL R 4315.

PHYSICS

General

Electronic structure of solids. I: The energy band method, by John C. Slater. Massachusetts Institute of Technology. Solid-State and Molecular Theory Group. Jul 1953. 123p diagrs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $5.25, Photostat $16.50. PB 113526

O.N.R. Contract N5ori-07856. Continues Technical report no. 3.
1. Solids - Electronic theory 2. Solids - Crystal structure - Theory 3. Mathieu functions 4. Schrödinger equation (Particle interactions) 5. Wannier functions 6. MIT SMT TR 4.

Flight aspects of the mountain wave, by J. Kuettner and C. F. Jenkins. U. S. Air Force. Air Research and Development Command. Cambridge Research Center. Geophysics Research Directorate. Atmospheric Analysis Laboratory, Cambridge, Mass. Apr 1953. 18p photos, diagr, graphs Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $.50. PB 111342

This survey is based on an intensive investigation of the flow pattern in the Sierra Nevada mountains of western United States. Flight through the mountain wave, a phenomenon associated with strong flow across a ridge of mountains, is described from a pilot's point of view. An example of an attempted wave flight is analyzed. Many striking features of the mountain wave, which were observed by the use of instrumented sailplanes whose locations were determined by optic and electronic tracking equipment and supplemented by time-lapse motion pictures, are presented. These include certain typical cloud formations usually associated with the wave, thus making it recognizable to the pilot. A detailed description, including graphs and pictures, is given of the flow structure and the clouds. Air Force Surveys in Geophysics, no. 35. AAF GRD SG 35. AAF CRC TR 53-36.

Heat transfer and flow friction characteristics of porous media, by J. E. Coppage. Stanford University. Dept. of Mechanical Engineering, Stanford, Calif. Dec 1952. 76p diagrs, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $3.75, Photostat $10.25. PB 113582

Contract N6onr-251, Task order 6 (NR-090-104).
1. Heat - Transference - Measurement 2. Heat - Transference - Theory 3. Driction - Measurement 4. Friction - Measuring equipment 5. Materials, Porous - Air resistance - Measurement 6. SU ME TR 16.

Impingement of water droplets on an ellipsoid with fineness ratio 5 in axisymmetric flow, by Robert G. Dorsch, Rinaldo J. Brun and John L. Gregg. U. S. National Advisory Committee for Aeronautics. Mar 1954. 50p drawing, diagr, graphs, tables Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113617

1. Drops, Liquid - Impingement on aircraft
2. Bodies of revolution - Droplet impingement
3. Bodies of revolution - Velocity - Theory
4. Trajectories, Water droplet - Calculation
5. Flow, Axial - Theory 6. U. S. Lewis Flight Propulsion Laboratory, Cleveland, Ohio 7. NACA TN 3099.

Progress report no. 28 covering period Apr 1, 1953-Jul 1, 1953 under Contract N5ori-76, Task order 1 (NR-078-011) and Task order 28 (NR-071-011), by E. L. Chaffee and H. R. Mimno. Harvard University. Cruft Laboratory. Jul 1953. 97p photos, diagrs, graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $4.50, Photostat $12.75. PB 113575

Contents: I. Electromagnetic radiation. - II. Wave propagation. - III. Electron and solid-state physics. - IV. Random processes and theory of communications.
1. Radiation, Electromagnetic 2. Waves, Electromagnetic - Propagation 3. Optics, Microwave 4. Ionosphere - Physics 5. Random functions 6. Noise - Statistical analysis.

Theory of information: Basic theorems on system uncertainty, by Edward W. Samson. U. S. Air Force. Air Research and Development Command. Cambridge Research Center. Electronics Research Directorate. Communications Laboratory, Cambridge, Mass. Nov 1953. 29p diagr Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113295

Some eighty formulas are presented, proved, and related to a systematic development exhibiting structural relations in simple order, with a complete notation scheme based on the calculus of classes. A partial uncertainty function has been introduced as a useful structural element. AAF CRL E 5102. AAF CRC TR 53-37.

Une nouvelle solution du probleme de l'attenuation des luminances (A new solution of the problem of attenuating luminance), by Georges Blet. Translated by F. Rizzo. Oct 1953. 15p diagrs, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113609

Translated from Revue d'optique, Paris, tome 32, no. 4, Apr 1953, p. 204-212.
1. Light - Attenuation - Theory - France
2. NAVSHIPS T539.

Nuclear

Progress report, 31st, for the period Sep 1, 1953, to Nov 30, 1953. Massachusetts Institute of Technology. Laboratory for Nuclear Science. Nov 1953. 83p photos, drawings, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $4.00, Photostat $11.50. PB 113481

Contracts AT(30-1)-905 and N5ori-07806.
1. Atomic power - Research 2. Nuclear chemistry - Research 3. Particles - Scattering 4. Cosmic radiation 5. Synchrotrons 6. Cyclotrons.

Two problems in the theory of atomic spectra: Orbit-orbit interaction and central field, by David R. Layzer. Harvard University. Harvard College Observatory, Cambridge, Mass. May 1950. 285p diagrs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $9.25, Photostat $36.50. PB 113365

Contract W19-122-ac-17, Special report no. 23. Thesis. Appendix I. Matrices of electrostatic interaction for d^4 and d^6 p. - Appendix II. Interaction of electrons in classical electrodynamics. - Appendix III. Note on the perturbation theory.
1. Atomic power - Research 2. Electrons - Interactions - Theory 3. Spectra, Atomic - Theory 4. Polarization, Atomic - Theory 5. Perturbulation - Theory.

PHYSIOLOGY

Radiation hazards in high altitude aviation, by Cornelius A. Tobias. California. University. Donner Laboratory, Berkeley, Calif. May 1952. 43p diagr, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.75, Photostat $6.50. PB 113700

A comprehensive review and summary is given. On the basis of existing physical data and biological knowledge, estimates were made of the dosage delivered by cosmic radiation at very high altitudes. It was concluded that even extensive high altitude flying would have very little effect on health and would constitute only a small hazard compared with other commonly accepted radiation dangers from artificial sources. Aero Medical Laboratory RDO no. 695-72. AAF WADC TR 52-119.

Research program for the University of Texas-USAF SAM Primate Laboratory, by Sylvan J. Kaplan and George E. Thoma, Jr. U. S. Air Force. School of Aviation Medicine, Randolph Field, Texas. Oct 1953. 6p Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113264

The program's ultimate objective is to gain information regarding pathogenesis, diagnosis, attenuation, and therapeusis of radiation effects. The article stresses interdisciplinary research coordination, particularly between biologic and behavioral investigations. It outlines biologic and behavioral programs. The article further indicates the projected plans for the studies of varying types and conditions of irradiation, including partial and whole body radiation with neutrons and x- and gamma rays. AAF SAM Proj 21-3501-0003, Report no. 1.

PSYCHOLOGY

Analysis of some of the determinants of non-scale types, by Seymour Lieberman. n.d. 10p tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113695

1. Questionnaires 2. Motion and time study
3. Psychological tests - Rating scales.

Assimilation of sequentially-encoded information. IV: The informational contribution of "wrong" responses, by Irwin Pollack. U. S. Air Force. Human Resources Research Laboratories, Bolling Air Force Base, Washington, D. C. Sep 1952. 14p graphs Available from Library of Congress, Pub-

lication Board Project, Washington 25, D. C. Microfilm $1.75, Photostat $2.50. PB 113164

Page 2 is blank.
1. Information - Theory 2. Psychological tests
3. AAF HRRL MR25.

Effects of noise on human behavior, by John F. Corso. Pennsylvania State College. Dept. of Psychology, State College, Pa. Dec 1952. 71p photos, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $3.75, Photostat $10.25. PB 113701

In general, the results of studies show that noise has no marked effect on mental performance and that individual differences in noise susceptibility are unrelated to personality characteristics. There is some indication that a relationship exists between noise susceptibility and functional level of the autonomic nervous system. Contract no. AF 33(038)-786. AAF WADC TR 53-81.

Effect of sublethal dose of x-radiation upon transfer of training monkeys, by Sylvan J. Kaplan and George Gentry. U. S. Air Force. School of Aviation Medicine, Randolph Field, Texas. Dec 1953. 10p photos, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113344

Results were entirely negative as to radiation effect. All animals transferred to the test material and their performances were in no way affected by radiation. Contract no. AF 18(600)-165. AAF SAM Proj no. 21-3501-0003, Report no. 4.

Psychophysical thresholds: Experimental studies of methods of measurement, by H. Richard Blackwell. Michigan. University. Engineering Research Institute, Ann Arbor, Mich. Jan 1953. 230p graphs, tables Available from Director, Engineering Research Institute, University of Michigan, Ann Arbor, Michigan. $3.50. PB 113104

Technical report, Project NR-142-106, Contract N5 ori-116, Task order V. Engineering Research Bulletin no. 36.
1. Psychological tests - Evaluation 2. Psychological tests - Rating scales 3. Sensory discrimination 4. Sensory physiology - Tests - Analysis of data 5. Sensitivity data - Mathematical analysis 6. Data collection procedures.

Sensitivity to changes in stimulus size: Reaction time as a function of rate of change, by Charles S. Bridgman and Edward A. Wade. Wisconsin. University. Apr 1953. 14p diagrs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $1.00. PB 111321

1. Targets - Size - Detection 2. Reaction time - Measurement 3. AAF WADC TR 53-199.

Visual discrimination of velocity as a function of the rate of movement and other factors, by R. H. Brown. U. S. Naval Research Laboratory. Jan 1954. 11p graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photostat $2.75. PB 113464

The present report describes the results of an experiment in which eight observers made 120 discriminations when the spot was moving at each of ten speeds. NRL R 4299.

RUBBER AND RUBBER PRODUCTS

Crystallization in butadiene-styrene copolymers, by Lawrence A. Wood. U. S. National Bureau of Standards. Jan 1954. 23p graphs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. PB 113550

These polymers contain trans-1,4-polybutadiene, cis-1,4-polybutadiene, 1,2-polybutadiene, and bound styrene units. Only the first forms crystals. The lower the temperature to which emulsion polymers of this type is exposed the greater is the quantity of bound styrene needed to inhibit crystallization. Technical report no. 14 on Project ONR(QMC)NR-330-013, Government order NA-onr-79-49. NBS project 0701-10-3803. NBS 3011.

Fluorine containing elastomers. First annual report, covering the period from 11 Jul 1951 to 11 Jun 1952 under Contract AF 33(038)-20581, by O. R. Pierce and E. F. McBee. Purdue University. Purdue Research Foundation, Lafayette, Ind. Oct 1952. 68p diagr, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $2.00. PB 111284

The nature of the work described in this report embraced the synthesis of two types of materials: (a) fluorine-containing silicones, and (b) fluorine-containing styrenes copolymerized with butadiene. These materials are to be evaluated as low-temperature, fuel-resistance elastomers. Appendix: Literature review of fluorinated styrenes and butadienes. AAF WADC TR 52-191, part 1.

STRUCTURAL ENGINEERING

Characteristics of short radius tube bends. U. S. Naval Research Laboratory. Order separate parts described below from Library of Congress, Publication Board Project, Washington 25, D. C., giving PB number of each part ordered.

First partial report, Jan 1943 through Feb 1944, by Turner E. Pardue, Paul S. Symonds, Irwin Vigness. Jun 1944. 69p photos, diagrs, graphs

Microfilm $3.25, Photostat $9.00. PB 113622

1. Tubes - Bending 2. Tubes, Curved - Bending 3. Tubes, Curved - Flexibility 4. Tubes, Curved - Stress analysis 5. NRL O 2317.

Second partial report (theoretical), by Paul S. Symonds and T. E. Pardue. Feb 1946. 73p diagrs, graphs, tables Microfilm $3.75, Photostat $10.25. PB 113631

The problem of determining flexibility factors and stresses in curved tubes, subjected to bending moments, is extended to thin walled tubes of short bend radius. The solutions obtained are sufficiently exact for design purposes when it is permissible to neglect restraints at the ends of a bend. As these end restraints are not usually negligible for short turn tubes, the results must be supplemented by experimental results in order that sufficiently exact solutions can be obtained for all cases. General equations have been derived from which the stresses and flexibility factors can be obtained for curved tubes bent either in or out of their plane of curvature. Curves of these values are presented for pipes having bend radii equal to two and equal to three pipe radii. NRL O-2761.

Effect of dynamic loading on the strength of an inelastic column, by William A. Brooks, Jr. and Thomas W. Wilder, III. U. S. National Advisory Committee for Aeronautics. Mar 1954. 29p drawings, graphs, tables Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113661

The maximum loads of idealized inelastic H-section columns whose pinned ends approach each other at a constant rate are presented. The solutions indicate that as the rate of end displacement becomes smaller the dynamic buckling solutions approach the static solution as a lower limit. For all rates of end displacement investigated the static maximum load may be employed as a conservative estimate of the maximum column load. NACA TN 3077.

Effects of panel flexibility on natural vibration frequencies of box beams, by Bernard Budiansky and Robert W. Fralich. U. S. National Advisory Committee for Aeronautics. Mar 1954. 55p drawings, graphs Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113658

Effects of local panel oscillations on bending and torsional vibrations of box beams with flexible covers and webs are investigated. Theoretical analyses of simplified models are made in order to shed light on the mechanism of coupling between local and overall vibrations and to derive results that can be used to estimate the coupling effects in box beams. Appendix A. Uncoupled vibration of members of rectangular bents. - Appendix B. Coupled rotational vibration of flexible rectangular bents. - Appendix C. Coupled deflectional vibration of flexible rectangular bents. - Appendix D. Uncoupled plate frequencies. NACA TN 3070.

Experimental stress analysis of stiffened cylinders with cutouts. Pure bending, by Floyd R. Schlechte and Richard Rosecrans. U. S. National Advisory Committee for Aeronautics. Mar 1954. 41p photo, drawings, diagrs, tables Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113534

Bending tests were made on a cylindrical semimonocoque shell of circular cross section. The cylinder was tested without a cutout and then with a rectangular cutout which was successively enlarged through six sizes varying from 30° to 130° in circumference and from 1 to 2 bays in length. Strain measurements were made with resistance-type wire strain gages near the cutout on the stringers, the skin, and the rings for each size of cutout, and the stresses obtained are presented in tables. NACA TN 3073.

Porcelain enamel in the building industry, November 12 and 13, 1953, sponsored by the Building Research Advisory Board and the Porcelain Enamel Institute. Editor: Edward H. F. Dickens. National Research Council. Division of Engineering and Industrial Research. Building Research Institute. Mar 1954. 186p photos, diagrs, graphs, tables Available from Building Research Institute, National Research Council, 2101 Constitution Ave., N. W., Washington 25, D. C. $6.00. PB 113702

Research Conference Report no. 6. National Research Council Publication 303. Contents: Summaries of conference papers. - Opening of the conference. - Session 1: Fundamental properties of porcelain enamel. Porcelain enamel from an ancient art to a modern industrial material, by Lana Chase. - Chemical properties of porcelain enamel coatings, by C. H. Spencer-Strong. - Physical characteristics of porcelain enamel, by E. E. Howe. - Weather resistance of porcelain enameled structural units, by Dwight G. Moore. Radiochemical decontamination characteristics of porcelain enamel, by G. W. Parker and G. M. Herbert. - Porcelain enamel manufacturing processes, by G. H. McIntyre. - Methods of testing architectural porcelain enamels, by W. N. Harrison. - General discussion . - Session 2: Uses of porcelain in building design. Design, manufacture and erection of architectural porcelain metal parts, by Benjamin B. Loring. - Porcelain enamel curtain walls and their utilization in the building industry, by E. X. Tuttle. - An architect's viewpoint of porcelain enamel used alone and in combination with other materials, by William Lescaze. - Creative uses of porcelain enamel, by Richard W. Hamilton. - General discussion. - Session 3: Porcelain enamel as an engineering material. - Engineering properties of porcelain enamel, by Forrest R. Nagley. - Flues, furnaces, and exhaust systems using high temperature porcelain enamels and ceramic coatings, by A. I. Andrews. - Porcelain enameled aluminum, by B. C. Bricker. - General discussion. - Session 4: Building experience with porcelain enamel, problems, solutions, costs. Use of porcelain enamel for hospitals, by James J. Souder. - Use of porcelain enamel in sales structures, by Paul R. Fritsch. - Use of porcelain enamel for houses, by Wenthworth

W. Lobdell. - Porcelain enamel steel in industrial buildings, by Milton Male and Carl F. Block. - General discussion. - Conference summary, by William H. Scheick. - Attendance at the conference.
1. Coatings, Enamel - Porcelain 2. Enamels, Porcelain - Properties 3. Enamels, Porcelain - Manufacture 4. Enamels, Porcelain - Uses 5. Aluminum alloys - Coatings, Porcelain enamel 6. Steel - Coatings, Porcelain enamel 7. Building materials 8. Building Research Advisory Board 9. Porcelain Enamel Institute 10. NRC 303 11. BRAB CR 6.

Thermal conductance of contacts in aircraft joints, by Martin E. Barzelay, Kin Nee Tong, and George Hollo. U. S. National Advisory Committee for Aeronautics. Mar 1954. 47p photos, drawings, graphs, tables Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113662

1. Joints, Structural - Heat transference 2. Bonding - Materials - Thermal properties 3. 75S-T6 (Aluminum alloy) 4. Steel, Stainless - Heat transference 5. Surfaces, Contact - Heat transference 6. Syracuse. University, Syracuse, N. Y. 7. NACA TN 3167.

TEXTILES AND TEXTILE PRODUCTS

Fiber project. Technical report no. I under Contract no. Nonr 839(01), Project no. 330-028, by Y. L. Sandler. Polytechnic Institute of Brooklyn, Brooklyn, N. Y. Jul 1953. 33p photos, diagrs Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.50, Photostat $5.25. PB 113538

Factors leading to the production of fibers of high strength from a given material are studied, using polyacrylonitrile as a model substance. Methods of production of fibers on a small scale and test methods are described. Attempts of improving the crystallinity - and thus the strength - of the fibers are described. Possible structural reasons for the lack of crystallinity are discussed.

Investigation of impact load absorption through suspension line elongation, by E. A. Gimalouski. Pioneer Parachute Co., Manchester, Conn. Dec 1952. 232p photos, diagrs, graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $2.50. PB 111239

The purpose of this investigation was the study of suspension lines under actual operating conditions, having varying degrees of elongation, energy absorption and elasticity. A secondary purpose of the investigation was the study of fabric porosity, shape and type of canopy, and method of parachute deployment. Contract AF 33(038)-10401. AAF WADC TR 52-57.

TRANSPORTATION EQUIPMENT

Aeronautics

Aircraft

British performance reduction methods for modern aircraft, by D. Cameron. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Jan 1948. 32p graphs, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $1.90. PB 113591

Cover date is 1953. S. O. code no. 23-2447. Appendix 1: Definition of symbols.
1. Aerodynamics - Theory - Gt. Brit. 2. Airplanes - Performance - Effect of temperature - Gt. Brit. 3. Airplanes - Performance - Gt. Brit. 4. Propellers - Performance - Effect of temperature - Gt. Brit. 5. Engines, Aircraft - Performance - Measurement - Standardization - Gt. Brit. 6. ARC RM 2447.

Cooling requirements for stability of laminar boundary layer with small pressure gradient at supersonic speeds, by George M. Low. U. S. National Advisory Committee for Aeronautics. Mar 1954. 16p graphs, tables Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113543

1. Boundary layer, Laminar - Flow - Pressure gradients 2. Flow, Supersonic - Pressure distribution 3. Flow, Laminar - Heat transfer 4. Boundary layer, Laminar - Stability 5. Reynolds number - Effect 6. Mach number - Effect 7. Velocity, Supersonic - Theory 8. Wings - Boundary layer - Temperature distribution 9. U. S. Lewis Flight Propulsion Laboratory, Cleveland, Ohio 10. NACA TN 3103.

Corrections for symmetrical swept and tapered wings in rectangular wind tunnels, by W. E. A. Acum. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Apr 1950. 33p drawings, graphs, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $2.00. PB 113598

Cover date is 1953. S. O. code no. 23-2777.
1. Wings, Swept - Effect on upwash - Gt. Brit. 2. Wings, Tapered - Effect on upwash - Gt. Brit. 3. Wind tunnels - Walls - Effects - Gt. Brit. 4. Upwash (Aerodynamics) Effect of wing sweep - Gt. Brit. 5. ARC RM 2777.

Design study of leading-edge inlets for unswept wings, by Robert E. Dannenberg. U. S. National

Advisory Committee for Aeronautics. Mar 1954. 56p photos, drawings, diagrs, graphs, tables Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113434

Supersedes NACA RM A9K02b. Appendix: Sample calculation of the velocity distribution over a given inlet pressure.
1. Inlets, Air - Inlet pressure 2. Inlets, Air - Design 3. Airfoil theory 4. Wings, Unswept - Inlets - Design 5. Airfoils - Velocity distribution 6. U. S. Ames Aeronautical Laboratory, Moffett Field, Calif. 7. NACA TN 3126.

Effect of subsonic Mach number on the forces and pressure distributions on four NACA 64A-series airfoil sections at angles of attack as high as 28°, by Louis S. Stivers, Jr. U. S. National Advisory Committee for Aeronautics. Mar 1954. 145p photos, diagrs, graphs, tables Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113544

1. Angle of attack - Effect on lift coefficient 2. Airfoils - Wind tunnel tests 3. Airfoils - Pressure distribution 4. Airfoils - Drag 5. Airfoils - Lift coefficient 6. Airfoils - Pitching moments 7. Mach number - Effect 8. Reynolds number - Effect 9. Flow, Mixed - Theory 10. U. S. Ames Aeronautical Laboratory, Moffett Field, Calif. 11. NACA TN 3162.

Effects of air humidity in supersonic wind tunnels, by Julius Lukasiewicz and J. K. Royle. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Jun 1948. 35p photos, drawing, graphs, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $2.25. PB 113594

Cover date is 1953. S. O. code no. 23-2563. Appendix: Data on humid air.
1. Wind tunnels, Supersonic - Air conditions - Gt. Brit. 2. Flow, Supersonic - Condensation reactions - Gt. Brit. 3. Wind tunnels, Supersonic - Humidity - Gt. Brit. 4. Humidity - Theory - Gt. Brit. 5. Dew point - Measurements - Gt. Brit. 6. ARC RM 2563.

Elimination of flow instability in two high-speed wind tunnels by means of high-drag screens, by J. Lukasiewicz. Canada. National Aeronautical Establishment. Nov 1953. 25p drawings, diagrs, graphs, tables Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.25, Photostat $4.00. Available for exchange from National Aeronautical Establishment, Montreal Road, Ottawa, Canada. PB 113438

1. Wind tunnels, High speed - Air flow - Canada
2. Wind tunnels, High speed - Contraction - Canada
3. Wind tunnels, High speed - Screens - Canada
4. Wing profiles - High speed tests - Canada
5. Vacuum tubes, Cathode ray - Screens - Canada
6. Pitot-static tubes - Wind tunnel tests - Canada
7. NAEC LR-83.

Experiments on the flow past a porous circular cylinder fitted with a Thwaites flaps, by R. C. Pankhurst and B. Thwaites, with appendix by W. S. Walker. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Oct 1950. 28p photos, diagr, graphs, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $1.70. PB 113599

Cover date is 1953. S. O. code no. 23-2787. Contents: Appendix I. Drag analysis for a suction aerofoil. - Appendix II. Smoke visualization of flow past circular cylinder with Thwaites flap, by W. S. Walker.
1. Cylinders, Circular - Porous - Wind tunnel tests - Gt. Brit. 2. Flaps, Aircraft - Suction effect - Gt. Brit. 3. Flaps, Aircraft - Drag - Gt. Brit. 4. Airfoils, Suction - Design - Gt. Brit. 5. Thwaites flap - Gt. Brit. 6. ARC RM 2787.

Fatigue investigation of full-scale transport-airplane wings. Summary of constant-amplitude tests through 1953, by M. J. McGuigan, Jr., D. F. Bryan and R. E. Whaley. U. S. National Advisory Committee for Aeronautics. Mar 1954. Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113545

Appendix A: Notes on the use of bonded wires to detect fatigue cracks, by M. H. Levin. - Appendix B: Notes on laminated fiber glass for structural repair during fatigue tests on C-46 wings.
1. Wings - Fatigue tests 2. Wings - Constant-amplitude tests 3. C-46 (Airplane) 4. Fiberglas - Use in wing repair 5. Fatigue, Structural - Testing equipment 6. U. S. Langley Aeronautical Laboratory, Langley Field, Va. 7. NACA TN 3190.

Federal airways air traffic activity, calendar year 1953. U. S. Civil Aeronautics Administration. 1954. 28p graphs, tables Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $.50. PB 111343

1. Airports - Air traffic control 2. Traffic, Air - Statistics.

Flight tests on swinging during take-off on a single-engined fighter-bomber (Typhoon Ib), by W. Stewart. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Apr 1948. 29p photos, drawings, graphs, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $1.80. PB 113596

Cover date is 1953. S. O. code no. 23-2660. Appendix I. Camera installation for giving take-off path.
1. Airplanes, Bomber - Flight tests - Gt. Brit. 2. Airplanes, Bomber - Yawing moments - Gt. Brit. 3. Yawing moments - Gt. Brit. 4. Airplanes, Bomber - Take-off - Gt. Brit. 5. Airplanes, Bomber - Wind tunnel tests - Gt. Brit. 6. Rudders, Aircraft - Design - Gt. Brit. 7. Rudders, Aircraft - Wind tunnels tests - Gt. Brit. 8. Flight tests - Photographic records - Gt. Brit. 9. Typhoon Ib (Fighter-bomber) - Gt. Brit. 10. ARC RM 2660.

Investigation of lateral and directional behaviour of single rotor helicopter (Hoverfly Mk.I), by J. Zbrozek. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Jun 1948. 20p diagrs, graphs Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $1.40. PB 113592

Cover date is 1953. S. O. code no. 23-2509. Contents: Appendix I. The tail-rotor angles of pitch required to trim in straight flight. - Appendix II. The stick displacement to trim in a steady turn. - Appendix III. The disturbed flapping motion.
1. Helicopters - Aerodynamics - Gt. Brit. 2. Helicopters - Stability, Lateral - Gt. Brit. 3. Helicopters - Stability, Directional - Gt. Brit. 4. Helicopters - Rotors - Theory - Gt. Brit. 5. Mk. I (Helicopter) - Gt. Brit. 6. ARC RM 2509.

Investigation of means to maintain zero electrical charge on aircraft. Cornell Aeronautical Laboratory, Inc., Buffalo, N. Y. Interim report for period Jul 1, 1953-Oct 31, 1953, under Contract no. AF 19(122)475, by Frank M. Pelton. Oct 1953. 5p Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $1.50, Photostat $1.50. PB 113587

1. Aircraft - Electrical systems 2. Electricity, Static - Elimination 3. Zero Electrical Charge System (Trade name) 4. CAL RA-766-P-9.

Performance after power failure of a helicopter with blade pitch control, parts I and II, by F. O'Hara and H. A. Mather. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Sep 1951. 16p graphs Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $1.15. PB 113600

Cover date is 1953. S. O. code no. 23-2797. Contents: Part I. Performance after power failure of a helicopter with blade-pitch control. - Part II. Performance of Hoverfly I during transition from powered flight to autorotation. - Appendix I. Analysis of transitional motion in forward flight. - Appendix II. Analysis of transitional motion in vertical flight.
1. Helicopters - Rotors - Pitching moments - Gt. Brit. 2. Helicopters - Rotors - Rate of vertical descent - Gt. Brit. 3. Helicopter blades - Autorotation - Gt. Brit. 4. Helicopter blades - Pitch - Gt. Brit. 5. Helicopters - Landing - Gt. Brit. 6. Helicopters - Performance - Tests - Gt. Brit. 7. Helicopters - Flight tests - Gt. Brit. 8. Hoverfly I (Helicopter) - Gt. Brit. 9. ARC RM 2797.

Pressure distribution and boundary layer investigations on a 44 degree swept-back tapered wing, by Joseph Black. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Dec 1952-Jan 1953. 52p drawings, diagrs, graphs, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $1.90. PB 113589

Cover date is 1953. S. O. code no. 23-9007-37. Contents: Part I. Three-dimensional tests on the wing, Dec 1952. - Part II. Two-dimensional pressure distribution tests on a 10% thick symmetrical aerofoil section, Jan 1953.
1. Wings, Tapered - Boundary layer - Gt. Brit. 2. Wings, Tapered - Pressure distribution - Gt. Brit. 3. Wings, Conical - Pressure distribution - Gt. Brit. 4. Wings, Conical - Boundary layer - Gt. Brit. 5. Airfoils, Two dimensional - Pressure - Gt. Brit. 6. ARC CP 137.

Pressure distribution, at supersonic speeds and zero lift, on some swept-back wings having symmetrical sections with rounded leading edges, by G. M. Roper. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Feb 1949. 20p diagrs, graphs, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $1.25. PB 113597

Cover date is 1954. S. O. code no. 23-2700. See also ARC RM 2548 (PB 108935) and ARC RM 2549 (PB 106261). Contents: Appendix I. Values of the functions f_1, f_2, F_1, F_2, F_3, F_4. - Appendix II. Evaluation of the second Lame function $F_n(k)$.
1. Wings, Sweptback - Pressure distribution - Calculation - Gt. Brit. 2. Wings, Sweptback - Aspect ratio - Calculations - Gt. Brit. 3. Wings, Sweptback - Drag - Gt. Brit. 4. Flow, Supersonic - Pressure distribution - Gt. Brit. 5. Spherical harmonics - Gt. Brit. 6. Lame functions - Gt. Brit. 7. Mathematics, Applied - Aerodynamics - Gt. Brit. 8. ARC RM 2700.

Review and assessment of various formulae for turbulent skin friction in compressible flow, by R. J. Monaghan. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Oct 1953. 52p graphs, tables Available from British Information Services,30 Rockefeller Plaza, New York 20, N. Y. $.75. PB 113590

S. O. code no. 23-9007-42. Contents: Appendix I. Relations between compressible and incompressible skin friction coefficients.
1. Airplanes - Skin - Friction - Theory - Gt. Brit. 2. Mach number - Effect - Gt. Brit. 3. Flow, Compressible - Gt. Brit. 4. ARC CP 142 5. RAE TN AERO 2182.

Rotary wing aircraft handbooks and history, vol. 13: Convertible aircraft, edited by Eugene K. Liberatore. Prewitt Aircraft Co., Clifton Heights, Pa. 1954. 80p photos, drawings, graphs Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Mimeo: $2.00. PB 111288

Contract no. W33-038-ac-21804 (20695). For Preview of the series see PB 110454.
1. Helicopters 2. Aircraft, Convertible.

Strömung und auftrieb bei einem dunnen doppelflügel (Flow and lift over a thin wing with double allerons and flaps), by Edward Bauermeister. n.d. 48f graphs, tables (Text in German) Available from Library of Congress, Publication Board Project,

Washington 25, D. C. Microfilm $2.75, Enlargement Print $7.75. PB 113385

Diss.-Technische Hochschule, Karlsruhe.
1. Flow, Two-dimensional - Theory - Germany
2. Wing - lift - Germany 3. Wing theory - Germany.

Supersonic theory for oscillating wings of any plan form, by W. P. Jones. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Jun 1948. 11p diagrs Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $.90. PB 113595

Cover date is 1953. S. O. code no. 23-2655.
1. Wing theory - Gt. Brit. 2. Wings - Flutter - Calculations - Gt. Brit. 3. Wings - Vibration - Theory - Gt. Brit. 4. Flow, Supersonic - Theory - Gt. Brit. 5. Mach number - Effect - Gt. Brit. 6. Green's theorem (Exterior ballistics) - Gt. Brit. 7. ARC RM 2655.

Theoretical effect of flight path angle on the lateral stability and response of an aircraft, by E. M. Frayn and M. V. Parnell. Gt. Brit. Ministry of Supply. Aeronautical Research Council. Nov 1945. 28p diagrs, graphs, tables Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $1.70. PB 113593

Cover date is 1954. S. O. code no. 23-2529.
1. Airplanes, Bomber - Stability - Lateral - Effect of flight path - Gt. Brit. 2. Airplanes, Bomber - Flight paths - Effect on stability - Gt. Brit. 3. Airplanes, Bomber - Stabilization - Gt. Brit. 4. Equations of motion - Gt. Brit. 5. Damping derivatives - Coefficients - Gt. Brit. 6. ARC RM 2529.

Theoretical prediction of pressure distributions on nonlifting airfoils at high subsonic speeds, by John R. Spreiter and Alberta Alksne. U. S. National Advisory Committee for Aeronautics. Mar 1954. 86p diagrs, graphs Available from National Advisory Committee for Aeronautics, 1724 "F" St., N. W., Washington 25, D. C. PB 113615

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EVALUATION OF A METHOD OF DETECTING ANODIC AND CATHODIC AREAS ON ALUMINUM SURFACES. R. E. Wilson. Nov. 23, 1953. 18p. Contract W-31-109-eng-52. (HW-30066).

ISC-354
Ames Lab.
CONDUCTANCES AND TRANSFERENCE NUMBERS OF SOME RARE EARTH PERCHLORATES, SULFATES AND NITRATES IN AQUEOUS SOLUTION. S. Jaffe and F. H. Spedding. June 1953. 126p. Contract W-7405-eng-82. (ISC-354).

ISC-433
Ames Lab.
THE USE OF COPPER AS THE RETAINING ION IN THE ELUTION OF RARE EARTHS WITH AMMONIUM ETHYLENEDIAMINE TETRAACETATE SOLUTIONS. F. H. Spedding, J. E. Powell, and E. J. Wheelwright. Dec. 8, 1953. 13p. Contract W-7405-eng-82. (ISC-433).

ISC-436
Ames Lab.
TRANSMISSION OF 0-40 KEV ELECTRONS BY THIN FILMS WITH APPLICATION TO BETA-RAY SPECTROSCOPY. R. O. Lane and D. J. Zaffarano. (Jan. 7, 1954). 21p. Contract W-7405-eng-82. (ISC-436).

ISC-437
Ames Lab.
CAUSTIC TREATMENT OF ZIRCON SAND. G. H. Beyer, D. R. Spink, J. B. West, and H. A. Wilhelm. (Dec. 28, 1953). 15p. Contract W-7405-eng-82. (ISC-437).

ISC-438
Ames Lab.
THE KINETICS OF THE REDUCTION OF PERCHLORATE ION BY Ti(III) IN DILUTE SOLUTION. Frederick R. Duke and Paul R. Quinney. Jan. 13, 1954. 15p. Contract W-7405-eng-82. (ISC-438).

K-1080
Carbide and Carbon Chemicals Co. (K-25)
METAL MATERIALS FOR HANDLING AQUEOUS HYDROFLUORIC ACID. M. Schussler, A. G. Dobbins, and D. S. Napolitan. Issued Dec. 7, 1953. 70p. Contract W-7405-eng-26. (K-1080).

KAPL-999
Knolls Atomic Power Lab.
SOME COMMENTS ON THE MASS SPECTROMETRIC ANALYSIS OF THE ISOTOPES OF LITHIUM USING A SURFACE IONIZATION SOURCE. T. L. Collins and F. M. Rourke. Nov. 9, 1953. 22p. Contract W-31-109-Eng-52. (KAPL-999).

LA-1600
Los Alamos Scientific ab.
EXPERIMENTAL STUDIES OF TAYLOR INSTABILITY. John C. Allred, George H. Blount, and John H. Miller, III. Nov. 1953. 72p. Contract W-7405-eng-36. (LA-1600).

NYO-3101
Columbia Univ.
VAPOR PRESSURE OF SODIUM. PROGRESS REPORT. M. M. Makansi, C. H. Muendel, and W. A. Selke. Dec. 1, 1953. 6p. Contract AT(30-1)-1101. (NYO-3101).

NYO-6096
Clarkson Coll. of Tech.
PERFORMANCE OF PACKED COLUMNS. (PART) 1. TOTAL, STATIC, AND OPERATING HOLDUPS. H. L. Shulman, C. F. Ullrich, and N. Wells. Jan. 8, 1954. 44p. Contract AT(30-1)-1463. (NYO-6096).

NYO-6097
Clarkson Coll. of Tech.
PERFORMANCE OF PACKED COLUMNS. (PART) 2. WETTED AREAS, EFFECTIVE INTERFACIAL AREAS, GAS PHASE MASS TRANSFER RATES (k_G) AND LIQUID PHASE MASS TRANSFER RATES (k_L). H. L. Shulman, C. F. Ullrich, A. Z. Proulx, and J. O. Zimmerman. Jan. 8, 1954. 54p. Contract AT(30-1)-1463. (NYO-6097).

NYO-6346
Pittsburgh Univ.
THE INFLUENCE OF STRUCTURE ON THE STABILITY OF CHELATES OF SOME SUBSTITUTED 8-HYDROXY-QUINOLINES AND ANALOGOUS REAGENTS (thesis). William Dwight Johnston. 1953. 165p. (NYO-6346).

NYO-6347
Pittsburgh Univ.
ACETYLACETONE AS AN ANALYTICAL EXTRACTION AGENT (thesis). John Franklin Steinbach. 1953. 127p. (NYO-6347).

ORNL-1445
Oak Ridge National Lab.
AN IMPROVED FLUOROPHOTOMETER FOR DETERMINATION OF URANIUM IN FUSED SODIUM FLUORIDE PELLETS. M. T. Kelley, H. L. Hemphill, and D. M. Collier. Feb. 8, 1954. 21p. Contract W-7405-eng-26. (ORNL-1445).

ORNL-1602
Oak Ridge National Lab.
DEVELOPMENT OF THE PIPE-LINE GAS SEPARATOR. J. A. Hafford. Issued Nov. 2, 1953. Decl. Jan. 14, 1954. 22p. Contract W-7405-eng-26. (ORNL-1602).

ORNL-1623
Oak Ridge National Lab.
DETERMINATION OF THE ALKALI METALS BY NEUTRON ACTIVATION ANALYSIS. G. W. Leddicotte and S. A. Reynolds. Issued Oct. 21, 1953. Decl. Jan. 7, 1954. 17p. Contract W-7405-eng-26. (ORNL-1623).

ORNL-1652
Oak Ridge National Lab.
ISOTOPIC ABUNDANCES OF PALLADIUM. J. R. Sites, George Consolazio, and Russell Baldock. Dec. 7, 1953. 11p. Contract W-7405-eng-26. (ORNL-1652).

UCRL-2312
Radiation Lab., Univ. of Calif., Berkeley
SOME MEASUREMENTS ON A HIGH-VACUUM HIGH-SPEED ION PUMP (thesis). John Stuart Foster, Jr. Aug. 17, 1953. 67p. Contract W-7405-eng-48. (UCRL-2312).

ELECTRONICS AND ELECTRICAL ENGINEERING

AECU-2789
Los Alamos Scientific Lab.
LARGE-VOLUME LIQUID SCINTILLATORS AND THEIR APPLICATIONS. C. L. Cowan, F. B. Harrison, and F. Reines. (1953?). 18p. Contract W-7405-eng-36. (AECU-2789).

AECU-2790
Los Alamos Scientific Lab.
COMPARISON OF INDUCTANCE OF ELECTRICALLY SHORT TRANSMISSION LINES. Douglas Venable, Charles F. Beckett, and Clarence J. Brown. (1953?). 5p. Contract W-7405-eng-36. (AECU-2790).

COO-1012
Illinois Univ. Engineering Experiment Station
COLLECTION OF AEROSOLS BY FIBER MATS. TECHNICAL REPORT NO. II. J. B. Wong and H. F. Johnstone. Oct. 31, 1953. 108p. Contract AT(30-3)-28. (COO-1012).

HW-29478
Hanford Works
A PORTABLE METEOROLOGICAL MAST. P. W. Nickola and R. G. Clark. Sept. 30, 1953. 29p. Contract W-31-109-Eng-52. (HW-29478).

HW-29732
Hanford Works
AN IONIZATION CHAMBER METHOD FOR ABSOLUTE GAMMA RAY DOSE MEASUREMENTS. I. T. Myers. Oct. 14, 1953. 30p. Contract W-31-109-Eng-52. (HW-29732).

LRL-62
Livermore Research Lab., Calif. Research and Development Co.
THERMOELECTRIC CALIBRATION OF ZIRCONIUM-CONSTANTAN AND ZIRCONIUM-ALUMEL THERMOCOUPLES. C. J. Shoens and J. W. Shortall. Issued Dec. 1953. 17p. Contract AT(11-1)-74. (LRL-62).

MLM-857
Mound Lab.
A WINDOWLESS PROPORTIONAL CHAMBER FOR ABSORPTION MEASUREMENTS. (INFORMATION REPORT). L. B. Gnagey. May 15, 1953. 8p. Contract AT-33-1-GEN-53. (MLM-857).

MTA-39
Livermore Research Lab., Calif. Research and Development Co.
AN AUTOMATIC SWEEP UNIT FOR SINGLE CHANNEL PULSE HEIGHT ANALYZERS. G. D. O'Kelley. Issued Oct. 1953. 15p. Contract AT(11-1)-74. (MTA-39.

ORNL-1656
Oak Ridge National Lab.
ELECTROSTATIC PRECIPITATOR FOR MEASURING PARTICLE-SIZE DISTRIBUTION IN AEROSOLS. Bernard G. Saunders. Feb. 8, 1954. 24p. Contract W-7405-eng-26. (ORNL-1656).

ORNL-1660
Oak Ridge National Lab.
A SERVOMECHANISM FOR MEASURING AEROSOL PARTICLE SIZE AND A SERVOMECHANISM FOR CONTROLLING PARTICLE SIZE IN THE DIOCTYL PHTHALATE AEROSOL GENERATOR. R. Louis Bradshaw. Issued Jan. 29, 1954. 36p. Contract W-7405-eng-26. (ORNL-1660).

UCLA-275
Atomic Energy Project, Univ. of Calif., Los Angeles
PRODUCTION OF HIGH SPEED LIQUID JETS BY MEANS OF A PROPELLANT. Brian Dunne, Jr.,

Herbert Gass, and Benedict Cassen. Issued Jan. 10, 1954. 19p. Contract AT-04-1-GEN-12. (UCLA-275).

UCRL-2251
Radiation Lab., Univ. of Calif., Berkeley
FORMATIVE TIME DELAY OF HIGH-VACUUM SPARKS. Harry G. Heard. Nov. 6, 1953. 24p. Contract W-7405-eng-48. (UCRL-2251).

HEALTH AND SAFETY

AECU-2796
Little, Arthur D., Inc.
SURVEY OF AIR SAMPLING MEDIA AND SAMPLING METHODS USED AT A.E.C. AREAS AND BY OTHERS. Sept. 1953. 5p. (AECU-2796).

ANL-5168
Ansco Div., General Aniline and Film Corp.
DEVELOPMENT OF A WAVELENGTH-INDEPENDENT RADIATION MONITORING FILM. FINAL REPORT. Aug. 1, 1953. 68p. Contract (W-31-109-eng-38), Subcontract 31-109-38-139. (ANL-5168).

HW-29478
Hanford Works
A PORTABLE METEOROLOGICAL MAST. P. W. Nickola and R. G. Clark. Sept. 30, 1953. 29p. Contract W-31-109-Eng-52. (HW-29478).

UR-266
Atomic Energy Project, Univ. of Rochester
POLONIUM IN THE URINE OF MINERS EXPOSED TO RADON. Mary Sultzer and J. B. Hursh. Dec. 7, 1953. 28p. Contract W-7401-eng-49. (UR-266).

UR-294
Atomic Energy Project, Univ. of Rochester
ATMOSPHERIC MONITORING FOR ALPHA EMITTERS USING MOLECULAR FILTER MEMBRANES. Thomas T. Mercer. Jan. 4, 1954. 24p. Contract W-7401-eng-49. (UR-294).

MECHANICS AND MECHANICAL ENGINEERING

AECU-2756
Johns-Manville Corp.
THERMAL INSULATION DEVELOPMENT. HEAT LOSS FROM SIR MARK A PIPING DUE TO PIPE HANGER AND CALROD PENETRATIONS THROUGH LK INSULATION. (SUPPLEMENTAL REPORT). S. Speil. Nov. 30, 1953. 4p. Contract AT(36-1)-8. (AECU-2756).

KAPL-1001
Knolls Atomic Power Lab.
THERMAL STRESSES IN RECTANGULAR STRIPS. PART 1. G. Horvay and J. S. Born. Oct. 20, 1953. 73p. Contract W-31-109-eng-52. (KAPL-1001).

METALLURGY AND CERAMICS

AECU-2780
Institute of Engineering Research, Univ. of Calif., Berkeley
FUNDAMENTALS OF GLASS TO METAL BONDING. TECHNICAL REPORT NO. 3. WETTABILITY OF ADDITIONAL METALS BY SODIUM SILICATE GLASS. David W. Mitchell, Joseph A. Pask, and Alexander Kaminski. June 1, 1953. 17p. Contract AT-(11-1)-34. (AECU-2780).

AECU-2794
Stanford Univ. School of Mineral Sciences
INVESTIGATION OF MATERIALS FOR USE IN A HEAT TRANSFER SYSTEM CONTAINING LIQUID LEAD OR BISMUTH. O. Cutler Shepard, James R. Morgan, Ralph Parkman, and Richard D. Seibel. Dec. 31, 1953. 41p. Contract AT(11-1)-190, Report No. 15. (AECU-2794).

ANL-5001
Argonne National Lab.
AQUEOUS CORROSION OF 2S ALUMINUM AT ELEVATED TEMPERATURES. J. E. Draley and W. E. Ruther. Feb. 1, 1953. 41p. Contract W-31-109-Eng-38. (ANL-5001).

BMI-888
Battelle Memorial Inst.
FABRICATION AND EVALUATION OF THIN CLAD SHEETS OF MOLYBDENUM. M. H. LaChance, C. M. Craighead, and R. I. Jaffee. Nov. 2, 1953. 40p. Contract W-7405-eng-92. (BMI-888).

BMI-891
Battelle Memorial Inst.
SOLUBILITY OF THE PRODUCTS OF CORROSION OF STAINLESS STEEL IN 600 F WATER. H. A. Pray and E. F. Stephan. Nov. 30, 1953. 12p. Contract W-7405-eng-92. (BMI-891).

COO-189
Armour Research Foundation
PHASE DIAGRAMS OF ZIRCONIUM-BASE BINARY ALLOYS. REPORT NO. 13. THE ZIRCONIUM-NITROGEN SYSTEM. REPORT NO. 3. OCTOBER 1, 1953-DECEMBER 31, 1953. R. F. Domagala and D. J. McPherson. Dec. 31, 1953. 11p. Contract AT-(11-1)-149. (COO-189).

DP-13
DuPont de Nemours, E. I., and Co. Explosives Dept., Atomic Energy Div.
EDDY-CURRENT INSPECTION METHODS: TRIP REPORT—THE DR. FÖRSTER INSTITUTE, REUTLINGEN, GERMANY. R. C. McMillen. Nov. 1953. 46p. Contract AT(07-2)-1. (DP-13).

HW-30066
Hanford Works
EVALUATION OF A METHOD OF DETECTING ANODIC AND CATHODIC AREAS ON ALUMINUM SURFACES. R. E. Wilson. Nov. 23, 1953. 18p. Contract W-31-109-eng-52. (HW-30066).

HW-30156
Hanford Works
A REPLICA PRESS ATTACHMENT FOR THE PRECISION MOUNTING PRESS FOR USE IN PREPARING ALUMINUM REPLICAS OF THE SURFACES OF IRRADIATED MATERIALS. W. E. Roake. Oct. 31, 1953. 15p. Contract W-31-109-eng-52. (HW-30156).

ISC-434
Ames Lab.
MEASUREMENT OF THE ELECTRICAL RESISTANCE OF METALS AND ALLOYS AT HIGH TEMPERATURES. Premo Chiotti. Dec. 28, 1953. 25p. Contract W-7405-eng-82. (ISC-434).

LRL-74
Livermore Research Lab., Calif. Research and Development Co.
AQUEOUS STATIC CORROSION OF ALUMINUM ALLOYS COUPLED TO STAINLESS STEEL AND ZIRCONIUM AT 350°F. P. O. Strom, M. H. Boyer, and L. M. Litz. Jan. 1954. 14p. Contract AT(11-1)-74. (LRL-74).

NYO-3101
Columbia Univ.
VAPOR PRESSURE OF SODIUM. PROGRESS REPORT. M. M. Makansi, C. H. Muendel, and W. A. Selke. Dec. 1, 1953. 6p. Contract AT(30-1)-1101. (NYO-3101).

NYO-6289
Massachusetts Inst. of Tech.
STUDY OF METAL-CERAMIC INTERACTIONS AT ELEVATED TEMPERATURES. F. H. Norton, W. D. Kingery, F. A. Halden, and M. Berg. Sept. 30, 1953. 37p. Contract AT(30-1)-1192. (NYO-6289).

NYO-6291
Massachusetts Inst. of Tech.
STUDY OF METAL-CERAMIC INTERACTIONS AT ELEVATED TEMPERATURES. PROGRESS REPORT (FOR APRIL 1 THROUGH JUNE 30, 1953). F. H. Norton, W. D. Kingery, et al. July 1, 1953. 6p. Contract AT-(30-1)-1192. (NYO-6291).

UCRL-4169
Radiation Lab., Univ. of Calif., Livermore
SPUTTERING OF STAINLESS STEEL BY PROTONS IN THE 30-80 KEV RANGE. Forrest Fairbrother, Jr. and John S. Foster, Jr. Aug. 11, 1953. 12p. Contract W-7405-eng-48. (UCRL-4169).

NUCLEAR TECHNOLOGY

NEPA-1446
NEPA Div. Fairchild Engine and Airplane Corp.
CALIBRATING OF THE NEPA STANDARD PILE. Fred Maienschein and William B. Baker. June 16, 1950. 31p. (Contract W-33-08-ac-14801(16250). (NEPA-1446.)